# ECONOMIC PRINCIPLES

A. W. FLUX

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# ECONOMIC PRINCIPLES

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## AN INTRODUCTORY STUDY

BY

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# PREFATORY NOTE

THIS volume contains hardly any references to the writers who have built up the theories of economics and given them the form which renders them useful in understanding modern economic facts. In omitting these references, my desire has been, not merely to avoid introducing controversies which can only interest students more advanced than those for whom I wrote, but also to retain a freedom of expression which I must have denied myself had I assigned each point of doctrine to those who first, or most clearly, gave it expression. I should like to express my indebtedness to many recent writers, and, if I have given an interpretation of them, here and there, somewhat different from their own, I trust that I have not lost the essence of their doctrines, so far as I am able to accept them.

No Cambridge student of economics in recent years can fail to have gained inspiration from contact with Professor Marshall, and the writer is conscious of a very special obligation to the teacher to whom he owes his chief guidance in economic study.

As with others, so especially in this case, the acknowledgment of inspiration carries with it no attempt to place a burden of responsibility for either the form or the substance of what is written here.

The text contains no explicit reference to the mathematical apparatus which has rendered eminent service in economics, especially in recent years. Some of the simpler applications of algebraic symbols and geometrical diagrams to economic problems are presented in an appendix. Those to whom these forms of expression tend rather to confuse than to clarify the reasoning which they embody, may thus readily spare themselves this confusion; while those to whom these symbols are familiar and helpful will not be deprived of the aid to precision of conception and of argument which can hardly be afforded in equal degree by any other means.

Readers who desire to pursue something more than an introductory course of economic study will find a few references to the more accessible works in the English language in the table of contents.

A. W. FLUX.

MONTREAL, *November* 1903

# PREFACE TO THE SECOND EDITION

IN preparing this volume for re-issue, it has been deemed desirable to recast entirely the treatment of money, international trade, and the foreign exchanges presented in Chapters XI. to XV. of the original work. The circumstances of the war and of the post-war period have given a fresh importance to monetary discussions. At the same time, the changes in the currency situation in many countries compel attention to some aspects of monetary theory which were quite conveniently neglected at the date of the first edition. In the discussion of the theory of international trade in particular, an attempt has been made to treat the problem from a standpoint differing from that of the traditional expositions of the subject. The essential features of those expositions are dealt with in Chapter III., which remains unaltered. The topics of the old Chapters XI. to XV. form the subject-matter of Chapters XI. to XVII. in the new edition, and in Chapter XVI., which replaces Chapter XIII. of the first edition, international value relations are approached from the standpoint of relative prices in place of the usual discussion of relative costs of production. In making this departure from the former treatment, it has been my hope that the problems of the foreign exchanges may be presented in a more real and effective manner, taking advantage of the light which has been thrown on the principles involved by the experiences of recent years.

The remainder of the volume is presented without change. This course has been followed after consultation with friends whose judgment is entitled to respect, and gives expression to the opinion that, so far from demonstrating the errors of the accepted body of economic doctrine, the experiences of the last nine years have justified a trust in the soundness of the analysis, the principal features of which it was the object of the volume to present. Without omitting much that I desired to retain, or considerably expanding the volume, it appeared to me that little advantage was likely to be derived from attempting to restate in other terms the arguments and discussions summarised in these pages.

A. W. FLUX

LONDON, 1923

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In economics, we study the complex organisation of communities, the sources of their wealth, the shares claimable by their members, and the allocation of tasks to individuals which result from the choice of occupation freely exercised under the stimulus of the rewards obtainable. Though not entirely free, this choice is effective in its exercise. Goods defined. Personal qualities conducing to effective production considered. National and individual wealth. Productive and unproductive labour. The necessaries of physical existence are not more rigorously required than conventional necessaries. Waste. Value in use and value in exchange. Wealth comprises valuable utilities. Exchange the pivot on which modern economic life turns. Divisions of the subject: production, distribution and exchange, consumption. The historical and *a priori* methods of study mutually helpful. Premises of economic argument. Action from self-regarding motives, the principle of population, the principles of diminishing returns and of diminishing utility, intelligent action and competition. Not all these universally applicable, even if generally so. Capital the means of future production. Income of direct satisfactions or of money. Trade-capital and consumption capital. Land not capital, though much of its value is due to capital . . . . . . 1–20

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| J. S. MILL | "Principles of Political Economy," Book III. Chapters III. IV. |
| MARSHALL | "Principles of Economics," Book V. Chapters III. IV. V. XI. XII. |

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| BÖHM-BAWERK | "Capital and Interest." |

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| MARSHALL . | "Principles of Economics," Book V. Chapters VIII. IX. X. and Book VI. Chapters IX. X. |

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| TAUSSIG . . | "Wages and Capital." |
| MARSHALL . | "Principles of Economics," Book VI. Chapters II. III. IV. V. |

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JEVONS . . . "Money and the Mechanism of Exchange."
NICHOLSON . "Money and Monetary Problems."
WALKER . . "Money."

Barter restrains trade, inasmuch as it involves risk of lack of mutuality of desire for exchange, of coincidence in values to be exchanged and of a common mode of expressing these values. The use of a general medium of exchange obviates these difficulties. Coinage facilitates the use of metals for the purpose in providing security against fraud and ensuring convenience. Money as a store of value. The common denominator of values may give place to substitutes in actual exchanges. The precious metals manifest considerable stability of value. Economy effected by deposit banking and clearing-houses. Cash

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CANNAN . "Money, its Connexion with Rising and Falling Prices."

LAYTON . "An Introduction to the Theory of Prices."

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II. "The Value of Gold," Chapter IV.

PIGOU . "The Economics of Welfare," Part VI.

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| Hawtrey . | "Currency and Credit." |

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| Clare . . | "The A B C of the Foreign Exchanges." |
| Goschen . | "The Foreign Exchanges." |
| Marshall . | "Money Credit and Commerce," Book III. Chapters IV. V. VI. XII. |

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**BASTABLE** . "Public Finance," Book III.

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## CHAPTER I

## INTRODUCTORY

WHEN we regard the position of a family, living without regular or frequent communication with the outside world, it is comparatively easy to comprehend the conditions which determine whether its supplies of the necessaries and comforts of life are abundant or meagre. The extent of its resources, whether consisting in the strength, intelligence, knowledge, endurance, industry, foresight, etc., of its members, and their willingness to co-operate for purposes where associated effort is more effective than individual effort; or in the equipment of tools and materials, domestic animals, buildings, etc.; or in the natural conditions of the country where they live, its climate, richness of soil, forests and streams, and the like—all these things can be fairly comprehended and their general bearing on the life of the family understood. The advantages which might accrue from communications with other such family groups, and exchange of goods with them, can also be readily conceived. The sources of abundance and scarcity are plainly revealed.

The same general features occur in the case of a great nation, but how different the detail. The mode of division of the acquisitions of the family is fundamentally different from that adopted as between the individuals of a numerous and varied society. The former is either arbitrary, in greater or less degree, or places all on a footing of equality. In the society, an individual has to make good his claim to a share of the total product acquired, by rendering some service, and that a service of sufficient importance to make it worth the while of the rest of the society to secure it. The problem for each is to discover what service he can render, that is of a sufficient degree of indispensability to society to enable him to procure a satisfactory recompense for himself from society, or to arouse a sufficient appreciation of the services he is able and willing to render to reach the same end.

In economic study we are engaged in examining the influence of the same features, as manifested in a community, which, in the case of the isolated family, were seen to condition the kind and amount of the gratifications it could procure. The nature of the environment, the extent of the equipment of tools, the skill and intelligence with which the work is planned and executed, are obviously of primary importance in the one as in the other case. But, in addition to regarding these features of the case, we need to devote a marked degree of attention to the study of those conditions which operate in the allocation of the amount received by each member. What is the basis of the claim he can make on society, what constitutes the inducement of society to admit his claim? This part of our work should throw no small degree of light on the great contrasts which exist between the amounts to which different members of the society succeed in establishing their claim. It should afford indications as to whether, and in what degree, these contrasts are a necessary feature of efficient social organisation.

The nation stands in need of the material goods, and the services, which afford to its members the means of satisfying their numerous and varied wants. Some wants are readily satisfied, while, for others, the means of satisfaction are obtained only with difficulty. If the activities of the nation were under the absolute control, and subject to the direction, of one man, we might conceive of him as directing to each occupation the amount of labour which, with the appliances afforded to assist it, would provide the required supply of commodity or service. If a change in the needs of the nation, or in the efficiency of special sections of producers, occurred, a transfer of labour and rearrangement of appliances would be required to adapt supplies to the changed needs. As the workers would be assigned to their work by the will of the director, the supplies of commodities would depend on that will rather than on the attractiveness of different occupations to those who followed them. Only in so far as assigning a man to congenial labour affects his willingness in work, and the giving of special rewards might stimulate to exertion, would the question of who was assigned to each task, and what reward was assigned to each, affect the amount of products available, since we might assume that those who were most capable of doing any special work would be assigned to that work by an intelligent director.

In the actual arrangements of modern societies, it is not quite easy to see that there is anything to correspond to the control of such an intelligent directing individual or body of persons. Each is left to choose for himself what he will do, and in what form he will take his reward for his work. His choice of occupations is not quite free; indeed, it is in most cases quite limited; yet, within the range of choice possible, the individual makes his own selection, or has it made for him by a parent or by some one exercising a kind of parental authority. If the choice be a personal one, it will be influenced by the attractiveness of the work and surroundings and by its remuneration. Thus the occupations which require no special skill are those open to the largest numbers. Those offering the greatest rewards to a given grade of skill attract more than those offering smaller rewards. The distribution of labour among various occupations, therefore, follows lines roughly corresponding to those which we might suppose chosen by an intelligent director. The labour whose reward is greatest is that whose result is most needed, for, as each is free to dispose of his income as he deems best, it may be assumed that he will select those things which afford him the greatest satisfaction in proportion to what he must give for them. Here again his choice is not absolutely free. The knowledge which each has, of what is available, is not unlimited. If the means of some do not extend to the provision for more than the most elementary wants, the extent of choice is restricted. Yet it can hardly be denied that a low price for a commodity implies that the needs, which remain unsatisfied, and to which it is capable of affording satisfaction, are small as compared with those which more highly priced goods can satisfy. The fact that property is unequally distributed, that some have large means, others small means, results in the fact that a slight need, of a person of large means, may find expression in the offer of a price higher than that which can be offered by persons of small means, for the gratification of important cravings. This feature hides from many enquirers the general truths to which attention is here directed. Admitting that it needs special attention, we repeat that freedom of choice as to what work one will do, and how one will take the remuneration for that work, tends to make employments attractive in comparison to the urgency of the need of the community for the results of those employments. Where goods of a certain kind are no longer required in the same supply as formerly, a warning is given to that effect by the diminution of the gains, which those who are concerned in making those goods can secure. In the opposite case, increase of reward serves to stimulate to an increase of supply of the things of which society stands greatly in need. That no small degree of efficiency is realised, in the distribution of the work of the nation among the individual citizens, is evidenced in the fact that supplies of necessaries are steadily produced to meet our needs, and in remarkable correspondence to those needs. The employments which seem in many respects most attractive do not draw to themselves the whole labour supply of the community. The great variety of human needs is met by a corresponding variety of means of satisfaction. Men do things that are not pleasant to do, for the sake of the living which they can secure in doing them. Thus each of us is justified in attending to his own special business, confident that others, in attending to theirs, will ensure the supplies of food, clothing, etc., which we need, and which, in a primitive state of society, we should need to provide by our own exertions if we desired them.

There is no benevolent autocrat adjusting the supply of labour in all the variety of modern industries. No supreme dictator decrees that, from the results of this year's labour, a certain portion shall be reserved to assist in performing next year's tasks more efficiently. Yet the extent to which labour is in excess in some localities and industries, deficient in others, is, generally, but slight. When it exceeds its usual amount it promptly attracts attention, but attention is practically confined to the fact that adjustment is, at the moment, defective, and not directed to the equally, nay more, striking fact that the vast mass of labour does not manifest this failure of adjustment. These points are not made for the sake of suggesting that present social arrangements are not capable of great improvement, but rather with the end of directing attention to the fact that, in any proposed modification, we must look for guarantees that the new order will achieve as substantial a degree of efficiency in adjusting the resources of society to its needs as the old, as well as for the assurance that defects in the old order will be remedied in the new. The mere substitution of one set of ills for another is hardly worth much effort, though the new ills appear no greater than the old. When realised, they might prove worse. We propose, in this volume, to study the main outlines of the economic organisation of modern society. By this is meant that part of social organisation which is related to human wants and human efforts directed to the satisfaction of those wants. We have to study men as producers of wealth, and to consider how the kinds of wealth which are produced depend on what men want to consume. We shall enquire into the principles which govern the exchange of one kind of wealth for another, and determine how much is assigned to each class of those whose joint efforts are requisite for its production. The influence of various institutions on the efficiency for production of the groups of men whom they affect will require consideration, and the reaction on production of the division of the product among the different classes of persons concerned in its production. Our subject, then, is certain aspects of man's relation to wealth. We enquire, therefore, at the outset, what is understood by wealth.

One characteristic common to all forms of wealth is that of being able to satisfy some human want or desire. Not all that can do this is wealth, and it is convenient to use the word "goods" to designate whatever possesses this characteristic, and to speak of the quality itself as "utility." When the need, which certain goods can satisfy, is already abundantly satisfied, these goods cease to have special importance. This occurs when the supply of them is free, and in sufficient quantity for all to have as much as they wish. Under these conditions every one will make use of the goods for every purpose which they can serve, but none will have any motive for acquiring supplies of the goods from others by exchange for other goods. In order to rank as wealth, then, goods must be capable of ministering to unsatisfied desires, they must be scarce.

Further, as wealth is a phenomenon of social life, goods which are not of such a nature as to permit of a change of ownership are generally excluded from the category wealth. There are some scarce personal qualities which cannot be separated from the individual who possesses them, and which contribute largely to his personal satisfaction, and even to his industrial efficiency, but which cannot be regarded as wealth. The relation of these qualities to wealth has been a subject of considerable discussion. Consider the skill of a workman. There can be no doubt that, were slavery a legal institution, and the workman a slave, his skill would be wealth to his owner, for a skilled slave is more valuable than an unskilled slave, other things being equal. Is, then, the question of whether skill is, or is not, wealth to turn on the existence, or non-existence, of the institution of slavery? One suggestion in reference to the matter is that the wealth consists, not in the skill, but in the right to dispose of it. This right belongs to the slave-owner where slavery is recognised, to the labourer where it is not. But the labourer can and does sell the right, with more or less limitation in the extent to which it can be exercised, to his employer. Thus the right to dispose of skill can be exchanged, and, fulfilling the conditions of utility and scarcity, comes within the range of our definition of wealth. An alternative mode of dealing with the matter is to admit a special category of "personal wealth," differing from ordinary wealth in being bound up with the person, and to class skill and similar qualities as "personal wealth." For almost all purposes, the former seems to be a sufficient solution of the difficulty, inasmuch as rights are admitted, with material goods, as elements in the aggregate of an individual's wealth.

In forming an estimate of the wealth of a community, the existence of qualified rights of ownership must, of course, not be overlooked. A mortgaged property is not a representative of wealth, in addition to the mortgage on it, equal to what it would represent if not mortgaged. There is the same wealth in either case, but the ownership of it is divided between mortgagor and mortgagee if it be a mortgaged property. So, too, the bonds of the State debt, or of a municipal debt, are items in the individual wealth of their owners, but in estimating the wealth of the community we do not need to add these evidences of debt to the aggregate of the physical property of the community, except in so far as they represent claims against outside communities. In some respects, the wealth of the community includes items not forming part of the private wealth of any of its members. Thus a public park is not a part of the private wealth of any citizen, where its use is free to all. To the community which owns and maintains it, however, it is certainly wealth. So, too, with other similar public property.

Wealth is not made up solely of material goods, as already indicated. It includes also rights to goods and to services which do not get embodied in material form. Those who produce, or aid in producing, wealth in a non-material form, are productive workers, equally with those whose labours are directed to the creation of material goods. At one time it was the custom to speak of all who were not concerned in the direct production of durable material goods as unproductive. But the work of those engaged in transportation industries, though it produce no change of form, or of name, of the goods which they handle, is a part of the work of their production. Until the goods have, not merely the form, but the position, desired, their production is not complete. Brick and stone, iron and wood, need to be placed in position to produce a building, and the labour of conveying them from the place of manufacture to the site of the building is not less essential, to their finding their due places in the building, than the labour of placing them in position as parts of the building itself. In both cases it is a moving of material to a place where it can serve a useful purpose. Those who are engaged in the designing of the structure, and in controlling the operations needed for its effective construction, are also, obviously, productive, in so far as the result could not be attained without their co-operation. The aid in effectively carrying out such business operations, which the designers, and those engaged in the transportation and commercial operations needed for its completion, render, is not the only indirect aid to the efficient performance of the manual labour of construction. The maintenance of law and order, of freedom from internal disturbance or foreign aggression, is also an important contribution to all classes of labour and enterprise. Administrative officials, and military officers and men, thus contribute their quota to the industry and commerce of the community. The degree in which the members of the teaching profession fall within the same category, though not equal for all, is sufficiently clear in reference to them as a body to need no special comment. In reference to those who render direct personal services, including public singers, actors, and musicians, we are concerned chiefly with the production of non-material satisfactions. There seems no reason for classifying the writer of romances, whose work is presented in the material form of a book, as productive, and the musician, who affords a pleasure at least as real when playing a musical instrument, as unproductive, though the latter pleasure cannot be repeated without the intervention of the musician, while the book can be re-read as often as one desires. If, for any purpose, the contrast between the producers of wealth in material or in durable forms, and those whose productions are either non-material or not durable. be required, it can be made without using the terms productive and unproductive in senses liable to be misleading.

The productive energies of a community may be employed in providing for the immediate and direct satisfaction of the wants of its members, or they may be partly devoted to acquiring the means of providing for the anticipated needs of the future. The resources of the community may not be adequate for more than its most important needs, or they may suffice for the provision of substantial comforts or luxury, both present and future. It is clear that the lack of necessaries must involve the cessation of supply of corresponding service. The interpretation of the word "necessaries" is not, however, uniform. It is sometimes used with reference to the physiological requirements for the maintenance of life, or of life and health. If any section or class in society fail to acquire these necessaries, it is a simple matter of the interpretation of the terms employed to conclude that that section or class cannot maintain its existence without such change, of numbers or of resources as will ensure at least the necessaries of existence to those who compose the class or section in question. But experience shows that no class or people, however narrow its resources, devotes the whole of those resources, in the most effective manner, to the provision of the most essential goods and services. In practice, some commodities are consumed which add nothing to the support of physical life, even at the expense of stinting the supplies of food, or of equally essential parts of the daily consumption. Thus there are found numerous instances where money is spent in providing showy outside garments, though such expenditure compels an inadequate supply of warm underclothing, and even of food as well. The supply of resources sufficient to provide for the physiological necessaries of existence does not, therefore, ensure that these necessaries are secured. Other goods often take precedence, and such goods, which, by the habits of life and standards of conduct of sections of the community, rank before physical necessaries, are known as "conventional necessaries." A very apt expression of the practical distinction between the more and less necessary expenditures has been given, in a definition which classed as necessaries those goods, the result of an increased cost of which was a decreased expenditure on other goods. Whether the resources at the disposal of given classes or communities will suffice to maintain a high order of physical and mental vigour or not, is only in part dependent on the extent of those resources. It turns also on the extent and nature of the conventional necessaries to the provision of which a part of the available resources will be devoted.

Just as the well-being of individuals is apt to suffer from the neglect of what are sometimes referred to as real necessaries, so may the welfare of a community suffer from the devotion of an inadequate proportion of its resources to the provision of food, shelter, and necessary clothing. Unless luxurious waste be an indication of superabundant resources, it must denote a want of balance in the various purposes to which the available resources are applied.

In economic discussion, no word is more frequently employed, no conception more essential, than that of value. As used in ordinary discussion, value denotes either of two different ideas. In one use it denotes the importance of goods of a given description to the user of them. As we shall see, this value-in-use, or utility, is not an unchanging characteristic of goods, or even a uniform result of the relation of goods to human wants.

The second use of the term value is to denote the power to procure other things in exchange, which useful goods have when they are not available in unlimited supply. Thus, the possession of a sack of flour may be important from either, or both, of the two points of view. To one person the importance of the possession of the flour may lie in the assurance thus afforded of a supply of food for himself, and for any dependent on him. To another, its importance is derived from the fact that it can be sold, and, from the proceeds, a variety of useful or agreeable things be purchased. In the one case it is a direct utility which is the measure of the estimation in which the goods are held. In the other, it is an indirect utility, or group of utilities, afforded by what is obtained in exchange for the goods.

It is best to employ the word value to designate the latter aspect of the importance of commodities, and to denote the former by the word utility or value-in-use. In view of certain striking features of resemblance between the two aspects of the property in question, it may be asked why the word value is proposed to be restricted in its application so as to refer to the latter case only, when used alone and without qualification, expressed or implied in the context. The reason is not far to seek. In the one case we are concerned with an estimation which is personal, private, peculiar. In the other, the private and personal features are obscured, at any rate when the exchange of the goods is conducted in an open market where many dealers meet. The peculiarities of the individual estimation count for but little in the face of many other estimates. The property we call value thus comes to be based on something else than the idiosyncrasies of the individual who happens to own the commodity whose value is in question. Value may almost be said to denote the public aspect of the quality which, in its private aspect, we call utility. Another view of the relation between these qualities is presented in the next chapter.

Reference to the discussion on the connotation of the word wealth will show that it is applied to all goods which have exchange value. Where utility is absent, exchange value is nil, and the objects in question will not be wealth. If goods have value in exchange, they must be capable of change of ownership, and not be freely available in unlimited amount. Thus wealth comprises goods which have value, or valuable utilities. Economic studies deal with man's relation to wealth as consumer and as producer. In modern life the consumer of goods is not generally also their producer. One fabricates, another uses. The maker gets his livelihood by exchanging his products for other products. This exchange is covered by a sale of the products for money, and a purchase of articles for consumption out of the proceeds. The fact of the exchange being one of product for product is not altered by separating the transaction into two stages. Exchange is the pivot on which all the rest of economic organisation turns. The terms on which exchanges can be effected determine the distribution of the joint product of many producers among these producers. In passing from producer to consumer, therefore, goods are exchanged, and the distribution of the value of the goods among the co-operating producers is a result of the terms on which the exchanges take place. Thus, in arranging the lines of division which it is convenient to draw in a systematic study of economics, the threefold division of production, distribution and exchange, consumption, satisfactorily meets the needs of the case. Each section must deal with conditions which concern other sections, for the efficiency of production is vitally affected by the degree of satisfaction realised in the processes of distribution, and the ends which will be sought in production are determined by the conditions of consumption.

In prosecuting our enquiries into the nature of the connections between different phases of economic activity, we may adopt either or both of two methods. The one, known as the historical or *a posteriori* method, sets out to discover economic principles as exemplified in the records of the life of peoples in the past, or as shown by a comparison of the present-day facts of different communities. The other method, known as the *a priori* method, endeavours to arrive at economic principles by logical deduction from well-ascertained facts of human nature, considered in relation to the environment within which the principles are to be operative. The great complexity of the conditions contemplated in any record of history renders it extremely difficult to proceed with certainty by the mere examination of facts. Facts teach nothing until they are arranged so as to show some prevailing tendency. The mode of arrangement must be determined on some principle or other, and the best principles of arrangement which can be adopted are indicated by careful study along *a priori* lines. Yet these lines of study must be inadequate unless the basis of argument is both judiciously and accurately selected. Reflection on the most universal characteristics of humanity may supply principles which can be utilised in a closer enquiry, as to the extent of the validity of these principles and the operation of modifying influences, thus providing a broader basis on which to push the *a priori* argument further. Fresh guidance, for correction of the hypotheses of the argument so as to bring them into accordance with actuality, may then be sought in historical enquiry. Thus the two methods may, and must, proceed hand in hand. They have done so to a large extent. The method followed in the present volume is mainly the *a priori* method, but the use of this method is not meant to imply the neglect of the other. The broader generalisations need constant qualification to adapt them for application to special groups or conditions, and the appropriate qualifications can only be discovered, in general, by a study of various sets of facts. The frequent appeal to statistics which is made by theoretic writers on economic subjects, is an example of this reliance on historical methods of enquiry, for the data of their arguments, or to provide illustrations of the operation of the influences whose effects they are discussing.

The data of economic arguments are comprised in three principal groups of facts. First, the facts of physical nature, such as those relating to the way in which the return to effort expended in the cultivation of land varies with the amount of effort devoted to any particular area. Secondly, the facts of human nature, such as the mode and extent of occurrence of self-regarding motives in economic action, and of regard for members of the same family, tribe, nation, trade, or profession; the degree of enterprise, intelligence, foresight, trustworthiness, caution, etc., displayed by any economic group which is the subject of study. Thirdly, such facts of social organisation as the nature of the rights of property, laws relating to inheritance, bankruptcy, etc., which prevail in the society which is the subject of study.

These different sets of facts are not related to economic argument in quite the same way. The first group must be accepted as practically unalterable, but the others are undergoing change in any particular community, though many of them change but slowly, and some change the mode of their manifestation rather than their real nature. In different communities, the differences in the characters of the people, and in their customs and institutions, must be taken into account, if we would judge rightly of the application of general economic principles to their special circumstances.

In order to deal with the complex facts of actual life in any satisfactory manner, it is generally advisable to deal with them a few at a time, and thus obtain clearly defined problems for solution. This is especially necessary in the early stages of economic analysis, before the habit has been formed of keeping qualifying conditions in view, and making the necessary allowances for their effect on the conclusions to which we are led. A satisfactory examination of a part of any problem of actual life, is likely to be preferable to an unsatisfactory attempt to handle the confusing perplexities of the complete problem. The latter may lead in an entirely wrong direction, without satisfactory indications of the cause and extent of error. The former may be wrong through incompleteness, but the half truth it presents, being known to be but a part of the truth, invites completion, and thereby correction. In other branches of knowledge a similar procedure, in handling artificially simplified problems for the purpose of learning the fundamental principles applicable to such cases, is followed with advantage. When these fundamentals have been duly studied, the attention can be given to more complex problems, more nearly representative of real conditions, and thus, by the continued application of the same method, the realities of experience may be handled with some assurance. When directing our attention to especially prominent features of industrial or other economic problems, then, we shall proceed always as if the statement of the case had included the phrase "other things being equal," or an equivalent expression, unless the opposite be distinctly stated.

The assumptions which generally underlie an economic argument, that is the facts which are of sufficient universality to be accepted as general data even when not specially named, may be briefly indicated, so far as their general nature is concerned. First comes the assumption that men desire wealth and endeavour to secure it at as little cost to themselves as possible. In the business relations of men, at any rate, this principle cannot be denied. Whatever altruistic motives may direct the spending of a man's income, in the getting of it he is mainly dominated by self-regarding motives. In accepting as a datum the prevalence of action by each man directed to secure his own interests, it must be observed that this is treated as a fact, not commended or the opposite. We desire to investigate the tendencies of things as we find them, and no greater mistake could be made than to suppose that economics is a kind of gospel of selfishness. Next come the recognition of the tendencies which lead to the multiplication of the human species and the conditions which limit the increase of numbers. The fact that the extent and fertility of the earth are limited, and that increase of energy devoted to the cultivation of the soil is not continuously repaid by a proportionate increase of product, is, as has been mentioned, an important fact in its bearing on numerous problems of social life. An assumption of very great importance, the existence of which, as an assumption in economic arguments, is so much taken for granted that it is frequently overlooked, is that men are capable of judging of the efficacy of means to an end, and that the easiest means will be chosen to reach any desired end. This assumption is as fundamental as the assumption of action from self-regarding motives, and it need hardly be remarked that it is not universally applicable in an absolute sense. If, however, men are to be treated in our arguments as unreasoning and unreflecting beings, neither caring nor knowing what results flow from any particular action, it will be necessary to rely on our knowledge of habits of action instead of arguing for intelligent action, for habits change but slowly, and hence a knowledge of the habits of the past forms a guide for the future. The principle of the satiability of wants forms also a practically universal datum in economic discussion. By this is meant that when a man's supply of any commodity increases, his desire for more decreases, and that he arrives at a point where he prefers to apply any available resources to procuring supplies of other commodities, rather than to increase his supply of the particular commodity under consideration. This is true of each class of goods in turn.

Further, the existence of competition is, generally, also assumed. By this is meant much more than can be briefly expressed here, but it generally includes the assumption that men are free to follow the course which commends itself to them as most suited to their conditions and the ends at which they aim. Artificial exclusion from industries or occupations which they might be suited to enter, and which they desire to follow, is inconsistent with the assumption of free competition. In reference to this assumption, as with some of those which precede it, it is known not to be universally applicable, and it is consequently recognised as necessary to endeavour to introduce, into problems where it is markedly deficient, some allowance for the lack of correspondence of some features of the problem with this part of the general basis of argument. In some cases the entire absence of competition, in some part of the field surveyed, forms part of the data of the problem.

Before proceeding to the discussion of the influences which operate in determining the relative values of commodities and services, the conception of capital, and its correlative income, must receive a brief consideration. The idea of capital is associated with those parts and forms of wealth which are used to secure future wealth rather than present gratification. The appliances of production, tools, materials, buildings, etc., form a prominent and characteristic part of the capital of the community. The essential features connected with the conception are that it embraces the wealth used to produce or secure a future income. Now the income may be a trade income, or a supply of goods secured by the use of the capital in business operations; or it may be an income of personal satisfactions directly secured by the actual use of the capital. Thus a yacht yields to its owner an income which may take the form of the price received for its hire, or may take the form of the gratification derived from the use of a yacht by a yachtsman. The gratifications are afforded as a direct income of utilities to the owner of a private yacht; analogous gratifications are secured by the hirer of a similar yacht, but the owner receives a price for the hire, which we regard as the income derived from ownership. In the latter case the yacht is trade capital yielding an income in money; in the former case the yacht is performing similar services, but its owner is the recipient of an income of direct utilities, and the yacht would be classed as consumption capital. Narrower definitions of capital have been used, which would exclude all capital which is not trade capital, but to refuse to recognise as capital things precisely similar in form and nature, and similarly related to all concerned in enabling the utilities to be procured by their use, introduces a too artificial line of division. Some capital renders its income of services to its owner; other capital, rendering a like income of services, renders them to others than the owner, and the owner derives an income in money or its equivalent by affording to others the opportunity of procuring that direct income of services. In the light of this conception of capital, the controversies as to the changes in the amount of capital which result from changes of intention on the part of an owner of commodities, the decision to turn them to the use of himself or family alternating with the intention to use them for business purposes, may be dismissed. There is no difficulty in conceiving of variations in the proportion of the total capital of any community which is devoted to trade, variations due to the whim or fancy of owners of portions of the capital, though it was not a proposition readily acceptable that the amount of capital in existence could so change from moment to moment, now increasing, now decreasing, while no change occurred in the actual commodities existing.

Some goods, by their nature, will generally form part of trade capital, others form trade capital or consumption capital according to circumstances. Thus a piano, or even the whole furniture, including ornaments, pictures, etc., of a house, may be hired as a business transaction, and the firms which keep such goods for hire hold them as trade capital. For a majority of people, however, household effects are owned by their users, and it is not customary to think of them as capital. Yet they form as real a part of the equipment of the community for the service of its members in the one case as in the other. If this view of capital be pushed to its extreme, it will make the definition embrace all produced wealth not yet consumed, even though it take a form of little durability and the act of consumption be in progress. Thus the food on the table at a family dinner would be included. But may it not be asked when food handled by the staff of a hotel ceases to be capital? Even here, then, the difference lies in the ownership during the last stages of preparation for use, rather than in the nature of the goods. Thus the application of the term capital in this case is less strained than appears at the first glance.

The relation of land to capital calls for consideration. The form of definition frequently adopted for capital describes it as the product of past labour. Thus land is excluded, since, in its essentials, it is a gift of nature, not the product of labour. From the point of view of individual producers, however, land is commonly looked on as part of capital. They have exchanged, in many cases, the ownership of other valuable goods for the right of ownership of the land. Frequently, too, the services which the land can render are due rather to the labour spent in modifying its natural condition than to other causes, and form but a modest reward for that labour. In the shape of improvements capital gets bound up with land, but, generally speaking, the capital which is associated with any particular piece of land can be either increased or decreased at will. The land is provided by nature. It can be made more accessible by man's efforts, or more capable of bearing crops, or otherwise aiding man's work as a building site. Its amount cannot, however, be increased or decreased by human effort, and some of its most essential characteristics are beyond the control of man to modify or destroy. Hence land does stand in a different category from capital when looked at from the point of view of the community. To the individual it appears as a particular productive instrument, and whether it owe its power of rendering service to human labour or to nature, is practically a matter of indifference. Its qualities, rather than how those qualities came into existence, are the matter of importance. It will be seen later that the fact that land is not a produced good, though it may be an appropriated good, makes it typical of specially important conditions in the theory of distribution.

## CHAPTER II

## DEMAND AND VALUE

THE interest of modern economics centres about the problem of value. What are the fundamental causes of value in commodities? Why is the value of one commodity great, that of another small? How can changes in the value of a commodity be explained? The answers to these questions will provide us with the key to the distribution of wealth among the classes of persons whose co-operation is necessary for its production. The consumer is guided in his selection of goods for his use by a consideration of the values which he finds placed on the different goods that can serve his ends. His judgment of the comparative relation, of the serviceability of the goods for those ends, and the values of those goods, must affect his choice of goods for consumption, if that choice is made deliberately and intelligently. If it be made as the result of habit, the habit reflects, in all probability, a comparison of this kind, either by the consumer himself, or by the class or community to which he belongs, though the habit may persist when changes in value, or in the serviceability of commodities, have created a situation which would no longer justify the deliberate selection of the goods as means to achieve the ends in view.

The producer, too, is under the control of the values of commodities. He will desire to direct his efforts so as to realise as great a value for his produce as possible. In selecting the goods to produce, and the means of production to be employed, attention must constantly be given to the amount of value which his output may be expected to have, and to the amounts of the values of the goods and services which must be consumed in its production. With an isolated individual, or self-contained household, the aspect of value which influences action is the serviceability of goods, their utility to the producing individual or household. In modern developed communities, the greater part of the productive effort is directed to the production of goods for exchange, and only the minor part, sometimes a very small part indeed, is devoted to providing for needs directly. In regard to this latter part, the consideration of importance in reference to what is produced is, as with the isolated individual, its utility rather than exchange value. In devoting attention to exchange value, then, that aspect of value which calls for most consideration is selected, while the fact that another aspect may have importance in particular connections is not ignored.

Considerations relating to value are, then, of fundamental importance in the fields of production, of distribution, and of consumption and value therefore claims the most careful attention of the student.

First, it is to be noted that value is not a property of commodities in any absolute sense. Value arises in virtue of the relation of commodities to persons. As needs change, both the absolute and relative importance of commodities will vary, and their values will be modified accordingly. Thus furs and fires have a very different degree of importance in summer and winter, in the tropics and in arctic or sub-arctic regions.

Let us develop this conception of changing degrees of importance possessed by identical commodities as a result of changed needs. For economic purposes, perhaps the most important illustration of this principle is found in the decrease of importance which we assign to further supplies of a commodity as the result of having already acquired enough of it to satisfy our ordinary requirements. This decrease is progressive and continuous in the vast majority of cases. The more we already have of a thing, the less eager are we for more of that thing. Our most pressing needs for it are, naturally, satisfied while we are still not supplied with enough to gratify every desire which the possession or use of the commodity could gratify. But the urgency of the desires left unsatisfied grows less as increase of supplies enables us to meet the progressively diminishing cravings for the satisfactions which the commodity can render. If we designate the least urgent of the desires which can be satisfied with any given amount of the commodity "the marginal desire," we can enunciate the principle that the intensity of the marginal desire for the commodity decreases as the supply of the commodity increases. The principle is otherwise phrased thus: The marginal utility of a commodity decreases as its supply increases.

If we consider, not one person, whose cravings are gradually satiated, but a group or community, the application of the principle is not less general, though some exception may be taken to the form in which it is expressed. The direct comparison of the urgency of the needs of different persons for any commodity is not feasible. We can only compare the offers made by different persons for additional supplies of a commodity. The amounts offered by different persons are affected, not only by differences in intensity of desire for the commodity, but also by differences in the amounts of other goods which they possess, and can offer in expression of their desires. Expressed in terms of money, such offers are known as "demand prices," and the principle previously enunciated takes the form: The marginal demand price of a commodity decreases as the amount already supplied increases.

It should be remarked at once that this phrase has no reference to changes which result from lapse of time. Lapse of time is, indeed, associated with change in the kind and amount of consumption desired by a person or community. But such changes, so far as they result from changes in the disposition of the person or community, are not here in contemplation. The statement is merely that, the needs for, and capacities for appreciation of, the different supplies of the commodity which can be conceived of, being what they are, the greater the actual supply, the less the marginal demand price, that is, the less the urgency of desire for further supplies.

Accepting marginal demand price as an index of marginal utility, this principle is often referred to as the principle of diminishing utility. As above stated, it is of extremely general applicability. The exceptions may, however, be deemed to require at least a passing reference. We shall refer to three different classes of exception.

The first is not, in reality, an exception as the principle has been enunciated, and not a universal exception however the principle be regarded. It is the case, not of desire for one particular commodity, but for wealth in general, and for money as the means of procuring all other commodities. With some persons, and in some stages of the accumulation of individual wealth, it is observed to be the case that the appetite grows by what it feeds on. In a vast majority of cases, however, even if we regard wealth in general instead of some one particular commodity, it may be laid down that the more urgent wants are first satisfied, and that, therefore, additions to wealth could only be applied to the satisfaction of wants less imperious than those already satisfied. In so far as this is true, the marginal utility of wealth, and not merely of any one form of wealth, may be said to decrease as its supply increases.

The second case may be illustrated by the victim of alcoholism, whose craving for more stimulant often grows as he gratifies it.

The third case has as type the collector, whose desire to acquire any further extant specimens of things of which his collection already possesses examples, may become by so much the more intense as his collection approaches exhaustiveness. This case, again, is quite usually not strictly an exception to the principle laid down, as the desired specimens are often not identical copies of one article, but examples of a class. It may be admitted, however, as an exception to the general rule.

There appear, further, to be some cases where, until the supply has reached a, more or less definite, considerable amount, desire for more grows with the supply, but a relative satiety is attained at last, and further supplies, even if affording additional satisfaction, afford it in diminishing degree.

It is to be noted that satiety, in the true sense of that term, is not attained so long as any additional satisfaction is derived from further supplies. When the point is reached where further supplies are indifferent, neither affording added satisfaction, nor diminishing the gratification already secured from previous supplies, the consumer may be said to be satiated. He desires no more, but has no economic motive for getting rid gratuitously of any part of his actual supply.

Reference is often made to satiety when a very different condition is really meant. On account of the decreasing serviceability of continual additions to the supply of any one commodity, it will constantly happen that more of some other commodity will be preferred to more of the one in question. Variety will be preferred to mere increase of goods of the same kind. This point of preference for other goods is not really a point of satiety, even though no further desire for the original class of goods be manifested till a large amount of other goods has been secured. At best it could be designated a point of relative satiety. It is certainly not to be called absolute satiety so long as any further satisfaction accrues from added supplies, as stated above.

The infinite variety of human wants is a feature worth special notice, and has often been a subject of comment. Rarely are goods consumed to the point of absolute satiety. Before that is reached, the means available for procuring the supplies which would bring satiation, are directed to procuring the means of gratifying some other taste or need. Attention has been given by several writers to the order in which wants thus secure attention. Food, clothing, and shelter are the most imperative needs of human existence, but no very great amount of means need be expended to avert fear of suffering from sheer hunger or nakedness. In respect of variety, however, desire for food and clothing is very expansive, and both of these, as well as shelter, account for large expenditures where the desire to procure distinction affects the amount and kind of expenditure as well as the simple needs for life-preservation. Apart, too, from the desire for distinction, as the result of conspicuous consumption of highly valuable goods, superior qualities of goods afford higher gratification than inferior qualities, and expenditure on food and clothing is capable of expansion, far beyond the limits provided by the sheer needs for existence, in procuring the satisfactions afforded by the consumption of superior qualities of food and clothing. The satisfaction of the more imperative cravings having been assured, the development of tastes of an æsthetic or intellectual character becomes possible. In affording gratification to these tastes, satiety is approached much more slowly than in the case of the elementary cravings, of hunger and the like. It thus appears to be in accordance with experience, that the more we have the more we want. Yet the sense in which this is true is not such as to negative the validity of the principle of diminishing utility, which may be expressed in a phrase corresponding to the one just used as follows: The more we have of any particular commodity, the less we desire to have more of that same commodity.

The statement of the demand for any given commodity, whether the demand of an individual or that of a community, cannot be considered to be satisfactorily expressed by a mere record of the amount of commodity demanded at some one price, even though the price in question be that prevailing at the time to which the statement refers. A complete knowledge of the demand requires, in addition to this particular "marginal demand price" corresponding to a stated quantity demanded at that price, further information as to the amounts demanded at each and every one of a series of prices sufficiently extensive to cover all probable changes which might supervene, even if it be not exhaustive, covering absolutely *all* possible prices. A tabulation of a sufficient number of prices, and corresponding quantities demanded, may suffice to indicate the direction, and approximate extent, of variation from these in the intervals between consecutive items in such a tabulation, since for practical purposes tables must be limited in extent.

Such a record will reveal, among other interesting features, the noteworthy fact that, in general, the increases in the amount demanded do not maintain a constant proportion to the corresponding changes of marginal demand price. When prices are high, and the demand, as measured by amount of commodity demanded, is small, a considerable fall of price is needed to cause a moderate growth in amount demanded. When prices fall to a low level, large increases of amount demanded are commonly consequent on quite moderate reductions of price, from any figure selected for purposes of making such a comparison. This proportion of growth in demand to fall in price is designated "elasticity of demand." If a fraction be formed, whose numerator is the proportionate (or percentage) increase in amount demanded, the denominator being the corresponding proportionate (percentage) fall in price, this fraction will measure the elasticity of demand over the range of the movement considered, and if the record apply to quite small changes, the corresponding fraction measures the elasticity of demand at the point selected as point of departure for the changes. As stated, in general, elasticity of demand is great when prices are low, but it may not always be small when prices are high. It may reach a minimum figure at some intermediate price-level, and again become great at high prices. For strictly luxurious expenditures the change from small elasticity of demand to great elasticity is a familiar fact. Fruits out of their natural season, forced to ripen at great expense by artificial means, are practically consumed only by the rich, and the extent of their consumption is not greatly increased by considerable reductions in price. Such fruits as are produced in great quantities at certain seasons, and are then sold at a low price, experience great elasticity of demand at such prices. Once brought within the range of expenditure of the masses of the people, the appetite of these masses is not readily satiated, and their demand is greatly stimulated by reductions of price, which, small in themselves, are considerable in their proportion to the price of the commodity, more considerable in their effect on the willingness of many to purchase largely. At prices which are low relatively to the means of even the poorer classes, goods which manifest a great elasticity of demand at moderate prices show a demand which has again become inelastic, approaching complete satiety. So far as the wealthy classes are concerned, their share in the demand for fruit, when it has reached prices within the reach of the masses, is inelastic. Short of such prices they habitually consume nearly as much as they would care to consume even if the price fell to zero, and hence further reductions of price do not stimulate to increased consumption among them. This corresponds strictly to the above statement as to goods whose price is low relative to the means of the poorer classes.

A question which presents itself in this connection is whether the importance of the satisfactions, afforded by the consumption of a given amount of a commodity, is modified by the fact that, in addition to that amount, a considerable additional quantity is actually consumed, affording satisfactions to wants of a less degree of imperiousness. It is a position not easy to realise clearly. Yet occasions arise when actual experience suggests a negative answer to the question. Take as example the anthracite coal strike of 1902 in the United States. The price of coal rose to fully double the ordinary figure in many places, and a great many people realised that the satisfactions, ordinarily purchased at a given price, were really important enough to induce giving the double of that price in order to secure the means of satisfaction. Uses of coal which afforded lower degrees of satisfaction were restricted, and those who could not afford to pay the extravagant prices demanded for hard coal, *i.e.* those whose demand, expressed in terms of money, fell short of ruling prices, had to go unsatisfied, and to do as best they could to attain by some other means the ends usually attained by burning hard coal. Under such circumstances, we realise that the importance of the services rendered by a certain supply of a commodity is not to be measured by the price paid when the supply secured is larger than this. The series of marginal-demand-prices, corresponding to all the varied possible scales of supply, register, in fact, the utility of the marginal supply for each such scale of supply, and that utility is secured even when it becomes unnecessary to pay the full price to which we should be prepared to submit rather than abandon the particular use served by that marginal supply. If we, then, take the series of marginal-demand-prices corresponding to supplies of 1, 2, 3 . . . units of commodity, and add them all together, the sum may be taken to express the total services rendered by the whole supply, though each and every unit is secured at a sacrifice corresponding to the utility of the marginal, or final, unit of the supply. The summation thus effected gives us a measure of the total utility of the actual supply of the commodity. If, when in restricted supply, the commodity has a large marginal utility, its total utility when in plentiful supply will be correspondingly large, though its marginal utility be then quite small. Our ordinary index of the importance of a commodity is its price, which registers its marginal utility. There is a consciousness that such an index of the importance of very many commodities is inadequate, and it is considered anomalous that some of the things of greatest necessity bear very low prices. It is suggested that this proves price to be an unsatisfactory measure of utility, and that the word value is misapplied when used in reference to the low price of goods of inestimable importance. The consideration that it is the total utility of a commodity which is the indication of its importance to those who use it, while goods, some supply of which is indispensable, may exist in such abundance that a portion of that abundance can reasonably be applied to unimportant purposes, and that the least important of the purposes to which it is actually applied is the determinant of what consumers are willing to give for it, may suffice to explain the apparent anomaly.

In fact, when reference is made to the utility of a commodity, whether the term utility or value be used to denote the quality, it is not generally the specific utility of some particular part of the supply which is intended. No distinction is drawn between the utilities of different parts of the supply in such a reference. If we are informed as to the quantity of commodity available, we can connect the value in exchange with that particular grade in the diminishing scale of utility which we have called the marginal utility. What is the lowest grade of utility which secures satisfaction out of the available supply? What is the highest grade of utility which fails to get satisfaction because of too keen competition for a limited supply? The value in exchange of the commodity is too great for the latter, but not too great for the former. If the grades of utility do not differ from each other by considerable amounts, the two limits named will be not far from identical. The measure of the exchange value is, then, the utility which is on the margin of not being realised, or the marginal utility.

When this marginal utility is small, the value in exchange is small, however great the total utility of the commodity. The more nearly our supplies of any commodity approach the amount required for satiety, the smaller the marginal utility, and the value in exchange to which it corresponds. Thus, the more completely the resources of society are made available for our well-being, the smaller is the measure of the wealth they represent. If all our wants were supplied freely, we could count none of the supplies among our wealth, though, in a certain sense, our well-being would be far more effectively secured than now. The increase of well-being is certainly not inconsistent with a decrease of the exchange value of the goods we enjoy. Yet the study of the sources and modes of creation of wealth retains great importance. It is very far from being true that decrease of wealth is necessarily associated with increase of well-being. To have a share in a large aggregate of wealth will generally enable more wants to be satisfied than to have an equal proportionate share in a smaller aggregate. It is, further, of no small importance to note that, in those lands where a minimum of effort suffices to procure natural products sufficient for the simplest needs of existence, the supply of the means of meeting the more complex needs has not, generally, reached a high level of abundance. Man is induced to do little except under the stress of necessity, but the development of his capacities, under that stress, puts him in a position to command more that is worth having than falls to him when the lavishness of nature encourages indolence.

Changes in the demand for a commodity, as that phrase is ordinarily used, may be of either of two entirely distinct varieties. A fall of the price enables some demands to become effective, which had not been so previous to the fall, and leads to a larger quantity being called for; a rise of price destroys the effectiveness of some part of the demand, prevents those desires for the commodity, which are keen enough to lead to its purchase at the old price, but not sufficiently keen to outweigh the raised price, from attaining satisfaction, thus diminishing the amount demanded. The general appreciation of the services which the commodity can render may, meanwhile, remain unchanged; that is to say, the state of demand may be really unaltered while the amount demanded responds to changes of price quotations. Price-change, in fact, leads to extension or restriction of the amount demanded, or, as is commonly said, of the demand, though this phraseology does not really describe the true nature of what is occurring.

Real changes of demand occur when the consumers of a commodity, regarded as a group, experience a change in their appreciation of the serviceability of the commodity. If this change be an increase, any specified price will evoke a demand for a larger quantity than before the change, while a higher price will be able to be exacted without decreasing the amount demanded. Should the change be of the opposite description, namely a decreased appreciation of the commodity, any particular price will not call forth a demand for so much as before of the goods, and, for any specified amount to be disposed of, a lower price than before the change will need to be fixed to ensure that the whole of that amount will be demanded.

The first-named class of change merely deals with how large a portion of the would-be consumers may become actual consumers, the latter kind of change implies that the consuming group has undergone a change of constitution, or that a change in its tastes or habits has taken place. In the former case there is not assumed to be any change in the marginal utility of any given amount of supply, though a change in the amount of the supply is contemplated; in the latter case there is contemplated a change in the marginal utility of each and every amount supplied. The two kinds of change are quite distinct in nature, and are worth distinguishing in discussing the problems which are presented for consideration in practice. The one kind of change may occur simultaneously with the other, and often does so, but confusion is likely to arise if the explanation of observed facts be sought in a reference to one of these causes of change alone, especially if the other cause should happen to have been the more important in the actual case presented.

## CHAPTER III

## EXCHANGE AND MARKETS

IN the preceding chapter, attention was directed to the relation between the valuation of each unit of a commodity by its owner and the supply of the commodity at his disposal, as also to the resulting differences in the relative valuation of different commodities, according to the relation existing between the supply of each and the purposes which can be served by its use. The comparison of the marginal utilities which the different commodities possess is the basis of their relative valuation. But these are comparisons made by each person between the different parts of his stock of wealth. The valuations made, by different persons, of the same goods, will not be of necessity the same, since they depend on the relation between the supply each has and his capacity for appreciating the services or satisfactions which the use or ownership of the goods can procure. Different individuals, if in possession of precisely equal supplies of the same kinds of goods, would not necessarily make the same comparative valuations of the goods. Before proceeding to consider how this is likely to affect the production of goods, we may usefully examine the results which may flow from exchange, apart from the causes which affect the supplies of goods which are at the disposal of various persons.

Let us suppose that two boys have been allowed to gather fruit for themselves; the one, A, having secured apples, the other, B, plums. They carry off their spoil and proceed to an exchange, with more or less of businesslike bargaining. At first, each having an abundant supply, they are not very careful of the terms of exchange, and an apple exchanges for five plums. At this rate, suppose three apples to be given for fifteen plums. This exchange appreciably diminishes the store which each has of the fruit he gathered, and, at the same time, diminishes the eagerness to obtain some of the other kind. Perhaps, at the start, A would have been willing to accept two plums for an apple, while B would have been willing to give as many as twelve in order to procure an apple. When B has procured three apples, he no longer cares so much to have more that he would give twelve plums for another apple, but would be quite ready to give nine each for one or two more. A, however, has secured a fair supply of plums, and does not care to accept for further apples fewer than six plums each. A new rate of seven plums for an apple presents advantage to both, and two more apples may change hands at this rate. After this, B does not care for more apples at any rate less than eight plums for an apple, but, if A wishes for more plums at this rate, one more apple may be exchanged for eight plums. B has now six apples, and his store of plums has been seriously diminished. He will not give more than seven plums at the most for even one more apple. A has thirty-seven plums, and his apples are fewer by six than at the start. He may have had a dozen in all, while B had, say, sixty plums. A will not part with any further apples at a less rate than ten plums for an apple. Further exchange is, therefore, out of the question. The marginal utility of apples has risen for A, while that of plums has fallen, and *vice versâ* for B. For each, the marginal utility of the purchased fruit, which started by being high, and that of his own stock, which was low at first, have become approximately equal. It is to be remarked that no comparison is made between the utilities of either fruit to the two boys, but only between the utilities of the two fruits to A and to B respectively.

This exchange might have proceeded differently if, instead of beginning at a rate of five to one it had begun at a rate of, say, twenty-five plums for three apples. At this rate, suppose an exchange of three apples to be made. After this exchange, A may be willing to take more plums at any rate not less than five for an apple, and B not willing to accept apples at any rate exceeding seven plums for an apple. Agreeing to exchange at six to one, two more apples are exchanged, and then neither is willing to exchange more at any rate which the other will accept.

The results of the two series of bargains differ, and the difference is due to the different rate established at the opening, itself due to the differences in bargaining capacity, which, in the first case, was supposed to give the advantage to B, in the second to A. This advantage is a relative advantage, meaning that the actual exchange approaches more closely to the limit beyond which one will not go than to the corresponding limit of the other. The bargainer who only gets nearly the least he would accept is the one who gets least relative advantage. Thus, when A would take anything beyond a two to one rate, B would yield anything not exceeding twelve to one. A five to one rate favours B more than A, a twenty-five to three rate favours A more than B.

There is some one rate which differs from all others, in the fact that, when all exchanges have been made which both bargainers are willing to make at that rate, there is no other rate at which they are willing to make any further exchanges. If they can hit on this rate at the outset, it will be the rate which holds till they cease exchanges. Thus, if an initial rate of seven to one had been established, it is possible that five apples would be exchanged at this rate, and that, then, A would want more than seven plums for another apple, while B would not give as many as seven plums for another apple.

There is a definiteness and finality about this rate which does not belong to any such tentative rates as may by chance be established in the way suggested above. So long as there are but two individuals concerned in the bargaining, and attention is paid to the momentary craving of each for a share of the goods possessed by the other, such rates are liable to be established. The more carefully the whole situation is weighed, the more complete the knowledge each possesses of the disposition and resources of the other party to the bargain, the more likely is it that the trade will open at the one rate which will hold so long as any trading remains mutually advantageous.

When the bargainers are not alone, but each forms part of a group, with varied desires and unequal resources, such tentative rates of exchange may also be set up. The individuals most anxious to effect a bargain may start the exchanges, and when they have finished, some of those remaining may have to be induced, by some modification of the rate of exchange, to part with some of their store. But if, before any rate is established, the dealers, as we may now call them, make themselves acquainted with the general supply of goods available for exchange by each side, there is a good deal of probability that the rate at which trade is opened will be that which will hold till the close. Those anxious not to lose a chance of disposing of their goods will be restrained from accepting terms of too little advantage, when they have discovered that their refusal of these terms is not very likely to lose them the trade. Thus, a difference between casual exchange between two individuals and the exchanges in a market, where many traders are gathered, is that a definite rate of exchange, the rate to which special attention was directed above, is more likely to be established in the market than in the case of casual exchange.

A market is established wherever a number of dealers in the same commodity are brought together. The gathering in one place is not essential, for the purposes such a gathering serves can nowadays be accomplished, in a large degree, by use of modern methods of communication, the post, telegraph and telephone, or even by means of the press, more particularly by trade newspapers. The gathering in one place serves very largely to establish quick and effective intercommunication between different traders. Each can acquaint himself with the rates at which others are dealing, and can guide his own actions thereby. But these items of information can now be supplied without the necessity for having the actual presence of the traders at the same spot. To that extent, therefore, traders may form part of the market though not physically present at a point where other traders are gathered.

The organisation of a market can easily be seen to operate in the direction of establishing definite rates of exchange for the goods dealt in, rates which apply to all those trading in the market. The weak trader is supported by the knowledge of the rates at which others are doing business, if those others are stronger than himself, that is, holding out for a higher valuation of the goods they offer, a lower valuation of those which they propose to acquire. If the general state of the dealers is one of weakness, the few strong dealers will have little opportunity of pushing their advantage. Their skill in bargaining will not avail much if competitors are so weak, that the dealers on the other side can secure what they desire without needing to trouble these strong holders. Thus, the mere association of numerous dealers tends to the avoidance of extreme rates, though these might be acceptable to some of the traders.

The example selected for discussion was selected for the purpose of bringing into prominence only the influences on rates of exchange which depend on the varying amounts of the supplies of the goods entering into an exchange. Reference to the way in which the supplies were acquired, or might be renewed, were purposely excluded. But, in actual practice, these conditions are also of importance. Let us vary our illustration so as to bring out this feature. We revert to individual exchange under primitive conditions. Suppose a fisherman and a hunter to meet after a day's work, and to make an exchange of part of their produce. The rate of exchange will be dictated by considerations of the desire of each for the goods of the other and of the supply of his own product which may remain to him after the exchange. So far, the same ideas as in the former illustration will apply. But this encounter between fisherman and hunter may not be casual and exceptional. It may be repeated at more or less regular and frequent intervals. In that case, another consideration will influence the terms of exchange. The hunter will not regularly accept, for his game, what he conceives to be too scanty a proportion of fish. His judgment of what is a fair bargain will be influenced by the average results of a day's or a week's work on the part of himself and the fisherman. If he be able to fish as well as the fisherman, he will be inclined to refuse to accept less than an average day's catch of fish in exchange for an average day's supply of meat. If he give heed to his greater skill as hunter, and the fisherman's greater skill in his occupation, he may set his limit at the amount of fish he could hope to secure, if he varied his diet by varying his exertions instead of by means of an exchange of products with his neighbour. The fisherman would have a similar limit, and thus the range of possible rates of exchange, which considerations of utility might permit, would be subject to such limitation as corresponded to the relative abilities of the exchangers in their own occupation, and in that of those with whom they effected exchanges.

When, in place of two individuals, we consider whole communities, this side of the problem gains in interest. The limiting rates of exchange are not now concerned with the efficiency of a hunter when he goes fishing occasionally, but with the division of the working force of each community between the various occupations open to its members. If, on the whole, a week's work of a tailor exchange for more than a week's work of a bootmaker, though bootmakers will not take to making clothes as an alternative to continuous work at boots, there will be a diversion of supplies of labour from the one trade to the other. Some decrease of numbers of lads learning to make boots, and an increase of those learning to make coats, will result. A limit to the rates of exchange of products of work will not be the comparative output of the skilled tailor as tailor and as bootmaker. The output as bootmaker might well be small, since the proper training would have been lacking. The limit is rather afforded by the output as tailor of a skilled tailor and as bootmaker of a skilled bootmaker. The effective diversion of labour from one trade to the other, made as above described, enables us to regard the labour-energy of the community as applicable to the two trades, in such proportions as seems desirable in view of the demand for the products, but so that we may treat the comparative results as if they were the results of alternative applications of the same labour-power, aided by the necessary machines, etc., required to give effect to labour.

The development of the subject in relation to the values of products as to which an exchange can be fairly readily effected, between the industries concerned, of the labour and capital engaged in their production, will be taken up in the following chapter.

When the readjustment of the productive facilities between different industries cannot be made, the final adjustment of exchange values, though by no means independent of the conditions of supply, and of the variations in these conditions which may be induced by changes in the values, is more immediately dependent on the play of reciprocal demand. The transference of a part of the producing forces from the one industry to the other being blocked, the conditions of supply in each industry are only affected by the conditions of the other industry through the greater or less abundance of the products of that other industry which are available for exchange against its own. This case has a special application in reference to international trade, and it will be taken up again in that connection. It has no small importance in regard to domestic industry, however, especially in reference to the exchange of the products of groups of workers between which there is no direct or indirect exchange of producing forces. Thus the hand-workers and the brain-workers are, to a considerable extent, separate groups in this sense. The selection of an industry for a youth entering on life depends on his faculties, and while a choice between different manual trades may be possible for one, a choice between different employments of the soft-handed type for another, the choice between hard-handed and soft-handed trades is only possible for the same individual in a limited degree. Thus the supplies of producing energy in these different groups are largely independent of one another, and the rates of exchange of their products are more obviously and directly dependent on the conditions of reciprocal demand, than on these as modified by reciprocal adjustments of supply.

The problem of the distribution of the product of industry, between owners of capital, land, labour, and directing power, is thus somewhat more closely related to the problem of relative values in international trade, than to that of the relative values of the products of different industries in domestic trade, where the free flow of producing powers between industry and industry can be accepted as approximately realised.

Let us return to the question of market organisation as affecting the determination of values. In practice, the exchange of product for product does not take place directly. Each product is valued in terms of a common unit of values; the values are expressed as prices. This again facilitates the arrival at a uniform basis of exchanges, a rate governing all the exchanges of the dealers whose association forms the market in question. The variation of the utility with the supply of each of the products, exchanged the one for the other, was seen to be important in arriving at a basis of exchange. When sales and purchases for money replace direct barter, the attention can be confined to the variations of the utility of one commodity only, the marginal utility of the money, either to purchaser or to seller, being treated as unaffected by the extent of exchanges accomplished. This simplifies the problem, and facilitates the determination of the rate of exchange, that is, in this case, the price, which will equate demand and supply in the market.

Markets are, for some commodities, necessarily local. For others they may, effectively, extend to very distant places, and, further, supply and demand may be adjusted to the circumstances of the immediate present, or to those of a period of some duration. Commodities which are perishable need to be disposed of within a period of time, and for use within distances, governed by the perishability. Further, some commodities need to be made to satisfy the fancy of the buyer, and such fancies may be peculiar, so that the goods can only be marketed where the user of them is. No world-wide market can exist for personal services, for example, and houses must be built on the spot where they are to be used. The limitations of marketability are not permanent and unchanging, even in reference to very perishable goods. The adoption of modern cold-storage devices has enabled fruit, meat, and dairy products to be supplied at great distances from their places of production, and thus enlarged the scope of the markets for these goods.

The nature of the goods dealt in, too, influences the extent and perfection of organisation of the markets for dealing in them. Some goods must be examined by the buyer before purchase, other goods can be bought and sold by samples, the sample sufficing to show precisely what kind and quality of goods are being bought. In other cases, a classification or grading of the goods can be made, as in the case of wheat, which is dealt in both by sample and by reference to standards of quality expressed by recognised descriptions or numberings of the different qualities. This dealing in a commodity, not present at the time and place of sale, reaches its greatest perfection in the markets for bonds of governments and shares of industrial companies and the like, known as stock exchange securities. Different bonds of the same issue are practically identical for most, if not for all, purposes. Consequently, dealers may buy and sell these, with absolute certainty as to what is being bought and sold, even though the certificates are a long distance away.

When goods can thus be accurately described, and cost little to transfer from place to place, suffering no deterioration from keeping, the dealers in many far distant places form practically one market. The telegraph supplies information as to conditions in all parts of the market, and, this essential condition being fulfilled, all the dealers are in effective competition with each other.

When the knowledge of every dealer, of the supplies, and of the prices at which transactions in the goods he deals in are effected, is exact and complete, he will neither give more nor accept less than any other dealer in the same goods, allowance being made for any costs of transport from place to place. Thus, where a complete market organisation exists, there can be but one price for the same goods throughout the market at any moment, allowance being made for cost of transport when necessary. In the degree in which the nature of the goods, or the extent of the dealings which take place in them, render the organisation of the market for them less effective, this uniformity of price may not exist, and arguments, in which the assumption of such uniformity forms an important feature, need to be examined, in order to make such allowance as the case demands for irregularity of price.

## CHAPTER IV

## SUPPLY AND VALUE

HAVING examined the general nature of the conditions of demand for any particular commodity, we must now give some attention to the conditions which affect the supply. When the supply of a commodity is limited, and the commodity thus in limited supply possesses utility, the grade of utility which, with all higher grades, secures satisfaction, is less or more important according as the supply is less or more limited. Whatever influences the degree of limitation of supply must necessarily influence the amount of the marginal utility, that is to say, must influence the exchange value of the commodity.

Supply may be limited for three reasons at least. The actual amount of the commodity in existence may be beyond the influence of all human efforts, an amount to be accepted as a fact. The amount existing may be capable of expansion, but the supplies may be under the control of persons who find a profit in imposing a limitation on the amount made available for consumers. But though neither of these limitations exist, the increase of supply may involve considerable expenditure of effort, and in that case the supply will only be enlarged if it be worth while to undertake the necessary expenses involved in procuring an increase of supply.

As to the first case, the conditions are simple. A supply definitely limited in quantity, and in regard to which there is no need to consider the possibility of variation in amount in response to price-changes. A given amount seeking purchasers, the whole of which is to be sold, and no addition to which can be procured however much it may be desired.

These conditions are realised in some few instances, approximated to in others.

As the amount supplied is definite, we need only determine the one price, which is at once the highest at which the whole can be disposed of, and low enough to secure that a sufficient demand to carry off the entire supply will be encountered. The price which will ensure this will be determined by the state of the demand for the commodity. It will measure the marginal utility of the available supply. With a higher price than this, less than the whole supply will find buyers; with a lower price, buyers will demand more in the aggregate than the total available supply. The price, therefore, in such a case, will depend on the conditions affecting demand. The supply is able to be taken for granted, is uninfluenced by conditions affecting price or demand, and is completely expressed in all respects by the mere quantity available.

The problem is varied somewhat if the supply be such that, while anticipations of high prices will lead to increased offers of goods, yet the amount offered for sale cannot be in excess of a fixed quantity. The problem is reduced to the preceding if the price, which is adequate to ensure the offer of all possible supplies, yet falls short of the price which measures the marginal utility of this maximum supply. Since, in this case, it is unnecessary to contemplate the offer of anything less than the full maximum of supply, the conditions which would lead to the withholding of some part of that supply need not occupy our attention.

But another variant of the problem is offered when we must take account of the possible restriction of supply, owing to the fact that the possessors of some part of it prefer not to sell the whole of their holdings at prices as low as those current at any particular time. In this case we cannot restrict attention to the utility of the goods to buyers and would-be buyers. We must consider also their utility to possessors who may become sellers. We revert, in fact, to the problem treated in the preceding chapter. The valuation of goods by sellers may be due to the direct utility which they possess, as consumption goods or as appliances for production. In order to induce the owners to sell in such a case, the exchange value must be great enough to outweigh the valuation thus made. But sellers may withhold supplies from the market in anticipation of a change in the market value of their goods. Only a part, even of a limited supply, will be offered on the market, if owners are confident of an improvement in the value of their goods sufficient to repay them for holding them.

The illustrations most commonly used, of the case of supplies absolutely limited in quantity, are pictures of deceased artists, rare first editions of much prized works, and things of that class. The exchange value of these goods will be dependent on their plentifulness, and on the wealth of those who esteem them highly. If they be greatly desired by a considerable number of wealthy people, the effort to become possessed of the available supply, or some part of it, will lead to the placing of a high valuation on the goods. But such objects have, frequently, no approximately regular valuation. The accident of whether, at the moment of offering them for sale, an exceptionally wealthy collector develops a desire to secure them, may lead to wide variation from previous valuations of similar goods.

The conditions affecting the value of goods whose supply has an absolute physical limit, unrelated to their value, are not characteristic of commodities used in the satisfaction of regularly recurring everyday needs. But, though not illustrating the commonest conditions affecting value, these goods form no exception to the ordinary principles of value. They even illustrate those principles admirably. But their case is somewhat peculiar, and the importance of its peculiarities can easily be exaggerated. It is desirable to note that, in the mode in which limitation of supply arises, their case is not typical of mercantile transactions in general.

The special consideration of the second case, that of a monopoly of supply, is reserved for the next chapter. It may, however, be noted incidentally that modern developments are bringing into greater prominence the monopolistic control of industry. And not merely is monopoly, as such, growing in importance, but also those forms of organisation, as a result of which the control of the supply of a commodity is dissociated from the winning of a profit by its supply alone; and thus increased attention must be given to the principles affecting the determination of prices under conditions which present substantially the same problem as those of monopoly. These conditions are not new, but they are requiring more careful study, because assuming increased importance.

The third mode of limitation of supply introduces us to conditions fairly typical of the more general aspects of the problem of value. In what follows it will be assumed that we are dealing with the case of goods regularly produced for a regular market. The sale of existing stocks is counterbalanced by replacing the goods sold by exactly similar goods. The production may be intermittent and the consumption continuous as in the case of grain, or the production may be continuous while the consumption is spasmodic as is approximately illustrated in the case of some season goods. Viewed from a somewhat broader standpoint than that of the moment, such irregularities of production or consumption may be ignored, or we may take the whole period, from one time of rapid production or consumption to the next succeeding, as the unit of time for the purposes of the problem. To consider merely the momentary situation throws us back on the problem of fixed amount of supply already considered. We shall, then, regard the cases now to be considered as cases of practically continuous production to fill the gaps made by a practically continuous consumption. Stocks in hand will merely be necessary in the same way as a reservoir may be usefully interposed between a continuously flowing stream and the places where the water is required for use, to regulate minor fluctuations in supply, and make a supply, which it may be impossible to arrange with strictly unvaried continuity, serve practically as a continuous supply, or adjust a regular supply to a more or less intermittent consumption. Under such conditions, though the goods which pass into consumption may not be identical with those which are just passing out of the hands of producers, no point of importance arises to modify the problem as a result, and we may proceed as if they were actually identical. A dealer, who is neither increasing nor decreasing his business, must replace goods sold from stock by others obtained from the makers. It will be the cost of procuring fresh supplies which will be the principal feature influencing him in putting a price on the goods, rather than the actual cost of the goods which he sells from stock. If he procured his stock more cheaply than he could now replace it, he will generally not give away such an advantage. Competitors, who carry smaller stocks or no stock, will be obliged to quote prices determined by current costs, and hence he will not be driven to quote a lower price based on previous costs. If prices have fallen since his stock was laid in, he may desire to recoup himself for the actual outlay he has made, but rivals, who procure supplies at current prices, will be in a position to undercut him, and hence competition, if keen, will compel him to base quotations on current costs of production, whether these be the same as, or different from, those which were incurred in the making of the particular articles offered for sale. In this respect, again, we may treat the goods sold as if they were actually those currently passing out of makers' hands. The hypothesis of a steady stream of production, and a steady consumption, enables this point of view to be taken. We deal with the organisation of production as if it had become settled on regular lines, and are concerned with the inquiry as to how those lines are determined by the conditions of demand and supply for the commodity considered.

We have to do with a supply, not limited rigidly by natural conditions, or controlled by one or more monopolists, but which is capable of extension in indefinite degree. If it be not actually indefinitely extensible, the limits which concern us are not those of the physical possibilities of the case. The supply, though thus extensible, is not equally free to all. Its increase can only be secured on the condition of expending labour and thought. What limits does this condition impose upon the supply? If we may assume that producers are influenced by the ordinary commercial motive, of undertaking only those operations the return from which is estimated to be worth the effort and expense necessary to secure that return, we may also assume that no regular supply will be produced the expenses of production of which exceed the value in exchange of the product. The consideration of this position puts before us the expenses of production as a measure or index of the limitation of supply. As value was seen to result from utility combined with limitation in supply, it is not difficult to see that, besides finding a measure of value in the marginal utility, we can also find one in some way related to expenses of production. How related to those expenses is the point for inquiry. The relation arises out of a connection between the amount of supply and the expenses of producing that supply, and therefore the various modes in which these expenses vary with that amount may result in different connections between value and expenses of production.

Consider any particular commodity, and take the total expenses of producing a given amount of it. Conceive of the comparison of the expenses of production of this amount with those for an amount greater or less than itself, and take the proportion of the difference in expenses to the difference in product. When this difference in product is only a small fraction of the total, we thus secure the measure of the marginal expenses per unit.

These marginal expenses per unit may remain unchanged when the rate of production, that is the number of units produced in a given time, changes, or it may vary with the rate of production. If they be unchanged, the conditions are described by the term "constant costs." If they fall as the rate of production increases, and rise as it decreases, the term "decreasing costs" is applied to the case. While if they rise as the rate of production increases, and fall as it diminishes, the term "increasing costs" is applied to describe the conditions of the case. It is, for some purposes, convenient to conceive of the relation of effort and sacrifice, rather than of expenses in money, to the product. The above three cases, if we thus compared product with producing effort instead of with the expense incurred in securing the control of that effort, would be referred to as manifesting respectively constant, increasing, and decreasing returns. It may be noted that, though, for different scales of output of the same commodity, the industry may not always be found in the same one of the three classes here distinguished, the actual situation must be included in one or other of the three variations of the relation of expenses to output.

If we are enquiring merely what conditions will lead to a supply at a given cost equal to the demand at a price adequate, but no more than adequate, to cover that cost, it may appear that we are not concerned with the differences between constant, decreasing, and increasing costs. That might be a tenable view if the actual conditions encountered in practice were not such as to make the rate of supply vary from its average amount from causes which may be described as accidental, as well as from the deliberate actions of producers. Will such accidental variations lead to permanent change in the relation of supply to demand or not? This is an enquiry of the greatest importance. A ball resting on a flat surface may be rolled along and stopped at any point, displaying no tendency to return to its original situation. If it be placed in a bowl, and rolled away from the bottom of the bowl, it will roll back again, while if it be placed on the top of an inverted bowl, a very slight displacement from its position of rest may send it rolling still further from that position. The shape of the surface on which the ball rests, whether flat, or like the bottom of a valley, or the crest of a ridge, is of importance if the ball is subject to disturbance, for it determines whether large changes may result from trivial disturbances or not. Similarly with regard to the balance of the forces which stimulate to an increase and those stimulating to a decrease of the scale of supply. It is not sufficient to direct attention to the point of equilibrium, but we must also consider the consequences of the disturbances to which such a condition of equilibrium is subject.

The relation of costs to scale of production may be conceived of, either from the point of view of an individual producing establishment, or from that of the industry, concerned with the product under discussion, as a whole. The value of the product will be related to the aggregate supply from the entire industry, and the aggregate demand. The stimulus to change of the rate of production is found in operation in the individual establishment. When constant costs prevail in the separate establishments, it is clear that no establishment can permanently contribute to the aggregate supply, unless its costs per unit are not greater than the value of the goods when produced. When increasing costs are found, each establishment will be able to contribute to the supply, with profit to itself, only to the extent to which its marginal costs are not in excess of the value of the goods. The aggregate supply may be maintained while great changes take place in the distribution of the production among the various producers. Some may increase their output while others decrease theirs, new producers may enter, while bankruptcy and other causes lead to the cessation of supply from some of the older producers. These changes may be accompanied by temporary disturbances of the balance of supply and demand, but may or may not disturb the general conditions determining the volume of supply and the intensity of demand.

In this chapter we are contemplating a supply by numerous competitors, striving to secure a share in the market for their product. If each contribute but a small fraction of the aggregate supply, the variations of that supply will be due to the efforts of producers to secure all the advantage which can be obtained from any changes in their share of the supply, but we need not assume that any of them deliberately aims at affecting the market price by changes in his own share of the supply. The total supply will affect the price, but, as it is not under any unity of control, it cannot be considered as adjusted to some desired level of price and of profits. If individual producers anticipate changes in the aggregate supply, they will adjust their output to the conditions of price likely to arise from such changes. Practically, therefore, where numerous competitors are in view, the feature of importance is the adjustment by each of his own production in view of the value which it will have as a part of the aggregate supply. The value can be taken as fixed beyond serious disturbance from efforts of any one producer. In this the contrast with monopolised supply, whether controlled by a single producer or by a combination of producers, is marked. Under monopoly, as will be seen, the quantity of supply is adjusted with deliberate reference to the influence of variations of that quantity on the value of the commodity. The same is more or less true when individual producers control so large a fraction of the aggregate supply that they can influence the price by restricting their supply or expanding it.

Let us now consider our three classes of conditions of supply in order. First comes the case of constant expenses per unit of commodity. If the price obtained be equal to these expenses (supposed to include hire of labour and capital, cost of raw material, and wear and tear allowances for buildings, machinery, etc., together with a profit sufficient to make it worth while to undertake the risks of the trade), and the total supply be such that its marginal utility falls to, but not below, the level measured by the price, the demand will be for the precise amount supplied, and, in the absence of disturbing causes, such a condition might be permanent. An equilibrium of supply and demand is established, at the level of price, and with the amount of supply, indicated.

Now suppose the supply to be increased beyond the equilibrium amount. The expenses per unit are equal to the old price, but the marginal utility of the enlarged supply is less than that of the old supply, and the demand-price is the measure of marginal utility, and, for the enlarged amount, is, therefore, less than the expenses per unit. The supply, under these conditions, namely, that the price, above which the whole supply cannot be disposed of, is below the expenses of production, is unremunerative, and cannot be permanently maintained. Competition to share in the advantages of such a market is not keen, and to withdraw from the competition means to reduce the supply. A reduction of supply may therefore be confidently anticipated, that is to say, a movement towards the equilibrium conditions.

Next suppose the supply to be decreased below the equilibrium amount. The marginal utility of this lessened supply is greater than that of the old equilibrium supply. The demand-price therefore rises, and the whole may find purchasers at a price above the equilibrium price, that is, above the expenses of production. To share in such a market is advantageous, and competition to share in it more largely means increase of supply. Producers who seek these advantages will therefore enlarge their output, while some may be attracted, from other lines of business, into the industry in question. Thus a movement towards the equilibrium amount of supply is stimulated.

We have seen, then, that whether the supply be greater than, or less than, the equilibrium amount, the forces of competition will stimulate to a movement in the direction of that amount. At the equilibrium, price measures at once the cost of production per unit, and the marginal utility of the supply. A supply and price thus in accord with the economic forces in operation is called a normal supply and a normal price.

If we turn to the consideration of the second class of conditions of supply, much of the above argument will again apply. In this case the increase of supply involves greater expenses of production per unit, decrease of supply means a lessening of expenses per unit, of commodity. If supply and demand are to be in equilibrium, the price must be adequate to remunerate producers of an amount whose marginal utility is measured by that price. In order to be adequate, it must suffice to cover the expenses of each and every unit of the supply. Additions to the supply involve expenses per unit which are greater than those attending the supply of preceding units. The price must be adequate to cover these expenses in every case, if we are to regard the supply as steadily maintained under the inducement of this price. The expenses of production of the most expensive unit of the normal supply must therefore be covered by the corresponding normal price, that is to say, the marginal expenses of production are equal to the price which equates supply and demand. That price suffices to induce a supply of such amount that its marginal utility is measured by the price. If the amount of supply be less, its marginal utility is greater, and its marginal expenses of production less, while if it be greater, its marginal utility is less, and its marginal expenses of production greater. The lines of argument followed above in the case of constant costs may be repeated here, the only modification being in the fact that the stimulus to movement in the direction of the equilibrium supply is by so much the greater, as the expenses per unit vary, from the level of the equilibrium rate of marginal expenses, in this case but not in the former. At the equilibrium, price measures at once the marginal utility and the marginal expenses of production of the supply. Both utility and cost produce effects on the amount of supply which suffices for equilibrium. Together they determine the equilibrium. The influence of utility is felt in determining what price can be secured for a supply of given amount so that the whole finds purchasers; the influence of cost is felt in determining whether it is profitable to produce that supply in view of securing the price so determined, whether the supply can be, economically speaking, maintained. The inverse method of statement is equally valid, and may be given in similar terms. The influence of cost is felt in determining what price is adequate to ensure a supply of given volume; the influence of utility is felt in determining whether, at that price, the volume of supply is sufficient to satisfy all who desire to purchase at that price, or whether it can all find purchasers at the price. When we contemplate unchanged conditions of production and of demand, either constant or increasing costs being supposed to prevail, the value of the product suffices to remunerate the productive services concerned in every part of the permanent supply. Individual producers may be involved in misfortunes or mistakes which lead to their giving way to others wiser or more fortunate than themselves. Making abstraction of such changes of personnel among the producers, changes which may readily give rise to oscillations of supply about the equilibrium amount, it may be said that the most expensive part of the permanent supply is produced with a view to realising a reasonable profit at the price anticipated, which, if we assume steady production for a steady demand, must be that corresponding to the equilibrium of supply and demand. Should conditions of production change in the direction of greater economy, this profit will be increased, and, by stimulating to an enlarged production, lead to a permanent increase of supply, and the establishment of a new position of equilibrium with demand, at a lower price. A similar statement may be made in regard to changes leading to increase of costs. Changes of taste or habit on the part of consumers may have corresponding effects, in causing a fresh adjustment of supply to the changes in demand that are thereby implied. If changes of both kinds are in progress together, the result may be no change of the price, or no change in the amount of supply needed to cause supply and demand to balance, but such a perfect compensation of the one change by the other is not in itself to be expected, and the new conditions of production and demand may probably lead to a new equilibrium, with modified price and supply, each either greater or less than before the change. Even during the transition, it may be possible to define the conditions of supply and of demand at the stage of change actually reached, and to deduce the amount of supply and the price which would be established under the influence of the conditions of that stage. When the change is a slow one, considerable interest attaches to the result of contemplating the temporary conditions as if they were final. When, however, the change is rapid and progressive, the examination of the goal of the change, and of the conditions associated with the situation which will be established when the goal is reached, possesses greater interest. When the goal is unknown, perhaps the most useful course is to follow the changing conditions, by conceiving of them as a series of consecutive states, stereotyped for purposes of examination, somewhat as if a series of instantaneous views of the momentarily dominating conditions were examined. The help thus rendered in understanding the current situation is not small. The adjustment of different parts of the social mechanism to changed conditions cannot be effected instantaneously, and it is of importance to conceive of the direction in which such adjustment is taking place for the moment, the momentary goal, which is to be shortly replaced by another, and so on *seriatim*. Many of the changes, which recent history records, are in the direction of economising productive effort, and making enlarged supplies of numerous important commodities easy of attainment. The improvement of industrial and commercial organisation, of appliances, of means of transport, all tend to reduce expenses over wide fields of productive effort. Thus the new positions of equilibrium are characterised by larger supplies and lower prices than prevailed formerly. But this is not inconsistent with the prevalence of diminishing returns at each stage of change; and hence this reduction of cost, as the growth of bodies of consumers leads to corresponding growth in the scale of productive industry, introduces us to no new problem of equilibrium. It merely describes the sequence of the series of stages of equilibria corresponding to the series of conditions of production and demand conceived of separately and consecutively.

A new problem is, however, presented by some of the conditions of modern industry, namely, those of the third of the classes of conditions of supply, known as that of increasing returns or decreasing costs. In some industries it is undoubtedly true that considerable increase of output could take place without a proportionate increase of expenses. Within wide limits the enlargement of the scale of production, not merely of the industry as a whole, but, in addition to or apart from this, in any particular producing establishment, would realise economies such as to enable satisfactory profits to be maintained even at reduced prices for the product. Where these conditions prevail, and the market for the product is not expanding, the enlargement of the scale of production of an establishment improves, *pro tanto*, its power of capturing a larger share of the existing market in competition with rivals who do not so expand their businesses. But, in a limited market, all cannot expand at once, and hence the expansion of some must imply the reduction of the number of competitors. If we conceive this process to be continued, the ultimate outcome must be the controlling of the whole supply by one producer, or a division of the field by agreement between surviving competitors. The examination of the case of monopoly is deferred for the moment, and we merely note it as the logical outcome, in the long run, of conditions of increasing return obtaining in reference to supplies for a limited market.

If the market is expansive, the case is somewhat different, though a good deal depends on the degree of expansiveness it may possess. With an expanding market, enlargement of the productive facilities of a business may not compel a struggle with competitors, to find an outlet for the increased product, so keen as to lead to the sacrifice of all the profits arising out of the economy of large-scale production, or, at any rate, may not involve the retirement of some of the producers to make room for the stronger rivals. The persistence of numerous contributors to the supply is possible so long as the market grows fast enough to provide room for the expansion of the output of the growing businesses. Further, the situation is likely to impose some limits on the capacity of individual establishments to expand. Continuous expansion demands continuous increase of capital, and time may be required to demonstrate the profitableness of such investments as a means of securing control of the necessary further supplies. Enlarged output may well mean changed organisation, in fact its profitableness may arise from changes in organisation, and these take time to carry out. Thus the market may have time to grow while the steps of expansion of production are being effected, and the persistence of competition, even under conditions of decreasing cost, be thus justified.

At a given stage of industrial knowledge and business experience, too, though the enlargement of a producing establishment may be accompanied by a relative decrease of expenses within certain limits, beyond some definite point further enlargement may show no further economy, or even a decrease of economy, in the sense of relatively increasing expenses. The organisation on effective lines of the larger scales of production may, further, prove to task the capacity of managers, so that a limit to the utilisation of all other sources of economy may be found in the limits to human powers of effective control. Thus, again, are suggested possibilities of continued competition, in spite of the existence of conditions of decreasing cost, and these possibilities arise out of limitations to the applicability of those conditions, in practice, without limit.

The relation of cost of production to value is not so simple in conception, when we assume conditions of increasing returns, as in the cases of constant or of decreasing returns. The division of the market among the different members of the body of producers is determined by conditions less simple to conceive, even if not less simple in reality, in the former than in the latter case. Conceiving, however, of the balance of supply and demand in the following fashion, without reference to the question of how this division is effected and a continuance of competition ensured, the outlines of the problem do not differ greatly from those laid down in the other cases. By the nature of the variation of marginal utility with supply, the marginal utility decreases as the supply increases. Under the assumed conditions, the price per unit which is adequate to evoke a given supply also decreases as that supply increases. If the supply price be always greater than the demand price for the same amount of supply, there can be no supply offered on a commercial basis, since all supply would involve loss. Hence, if the possibility of supply at a profit be assumed, the supply-price must fall as low as the demand-price for some scale of supply. Putting aside as improbable the identity of demand-price and supply-price for any considerable range of variation in the scale of supply, it follows that for some particular amount supplied the demand- and supply-prices are equal, and for lesser or greater amounts they are unequal. For a supply in excess of the equilibrium amount, the demand-price may be greater than, or less than, the supply-price. If the former be the case, there is a stimulus to an enlargement of supply, and the balancing of supply and demand has no stability. If the latter be the case, the increase of the aggregate supply, beyond the equilibrium amount, involves less profit than is realised at the equilibrium, and hence operates to restore that rate of supply which corresponds to equilibrium with demand. Similar statements apply to reduction of the scale of supply below the equilibrium amount.

We need, now, to consider whether there is reason to expect that, for amounts of supply greater than correspond to equilibrium, the supply-price will be above or below the corresponding demand-price. The consideration that the indefinite increase of supply cannot possibly be accompanied by an indefinite reduction of supply-price, while with a greatly enlarged supply marginal utility does tend to vanish, leads to the conclusion that there must be scales of supply for which the supply-price is greater than the demand-price. If there be any scale of supply for which the supply-price does not exceed the demand-price, there must exist an equilibrium of demand and supply of the ordinary stable type.

The term "supply-price" here used means a price adequate to induce producers to prepare, and offer for exchange, a supply corresponding to that price. It must, therefore, be a price sufficient to cover cost of production, and, if competition exist and be vigorous, the excess over cost of production will be not more than sufficient to afford such profits as competitors need to secure in order to continue in competition. Some writers use the phrase "necessary profits" to apply to the level to which competition tends to reduce profits, and such "necessary" profits are often taken to be included in cost of production. Read in that sense, the supply-price would become a measure of cost of production.

It has already been pointed out that cost of production comes to exert an influence on value because it expresses a condition which must be fulfilled (*i.e.* the cost of production must be worth while incurring) if supply is to be maintained. But the condition may be more or less comprehensive according as there is contemplated a more or less complete adjustment of productive apparatus to the purpose of affording the supply. A temporary need for increase of supply, or a temporary falling off in demand, cannot be met by corresponding adjustments of all parts of the requisites of production. If the enlarged demand be not likely to be maintained, it will not be profitable to procure expensive permanent aids to production, whose services would not cover their cost before the demand shrunk to its usual level, even if it be physically possible within the available limits of time. On the other hand, the corresponding productive instruments cannot at once be dispensed with on a reduction of demand, and if a renewal of the old demand be anticipated, it will not be worth while proceeding far with the reduction of the apparatus of production, so as to correspond with the temporarily checked demand. Even if the change in demand be likely to be maintained, it will not be physically possible to adjust, without delay, all parts of the machinery of production to the modified scale of demand. For a time, therefore, the whole of the costs of production are not capable of variation, and hence not all the costs of production can operate to condition the volume of supply. If an increase of the variable part of the expenses be accompanied by an increase of product whose value exceeds the increase of expenses, it will yield a profit, a contribution toward the fixed part of the expenses. Whether it will be worth while undertaking such addition to the supply depends on the effect on the price secured, not merely for such additional supply, but for the whole. If the addition can be disposed of without affecting the market for the bulk of the supply, it may be worth producing, but the contrary if its sale spoil the market for the rest. With falling demand, during the process of readjustment of the productive equipment to the reduced requirements, the reduction of output may often fail to reduce expenses to correspond to the fall in value, and a ruinous competition, to dispose of excessive production (excessive relative to reduced demand), may result in market values unremunerative to producers. The correspondence of value with cost of production will not be again secured till the conditions of production are adjusted (approximately, at any rate) to the new conditions of consumption. Meanwhile, some producers, realising that their productive equipment has lost value, and with impending ruin as a stimulus, may put on the market quantities of product for disposal at any price which will cover their current expenses, sacrificing income from their fixed plant as they would sacrifice its value if forced to realise on it. During the process of readjustment, then, the expenses directly incurred in producing a commodity, its *prime cost*, form a lower limit to value, but the total cost of production will not be restored as a measure of value until production is again held in check by the need of incurring those total costs as a condition of maintaining the supply. Even the prime cost may not be a lower limit to the amount which may be accepted for stocks which, produced by ruined firms, there is no intention of replacing, and in regard to which, therefore, their costs of production, even in the narrow sense of prime costs, have no influence on their supply. They cannot be conceived of as forming part of a regular stream of supply produced in view of an assured demand.

With rising demand, the more permanent parts of the productive equipment will need to be strained beyond their wont, and the prime costs of an increase of supply may well be in excess of the prime costs for the supply for which that equipment is adapted. If the total cost of production do not greatly differ from the prime cost, the condition of obtaining an enlarged supply is submission to a valuation for the whole supply corresponding to the additional expensiveness of increasing that supply. But if prime costs are a good deal less than total costs, the increase of production, yielding, as a result of the rising demand, a value greater than the same supply would have secured without that rise, affords a greater surplus of value over prime costs than before. The productive equipment yields an increased revenue, and this serves as a stimulus to its enlargement, if the increase of demand be likely to be permanent. So long as the cost of providing an enlarged equipment for production is less than would be reasonably remunerated by the revenue anticipated from it, when provided, the expansion of supply will be stimulated, and the competition of rival producers will induce a provision of such means of production up to the point where the total cost of production of the goods for which they are used corresponds to their value when produced.

The scale of production, with reference to which an individual producer will need to consider the costs of production which he must incur in contributing to the market supply, may be determined by the nature of the business in which he engages and the facilities he can command. Thus an agriculturist is limited by the extent and quality of the land he can control, and by the climate, among other influences. In other lines of production, while personal capacity and command of capital may be important considerations, the attainment of facilities for production, and a scale of output, of the same order as that of other typical businesses with which it is proposed to compete, may be reasonably contemplated in planning such competition. The economies which belong to the organisation of a business on such a scale may be counted on to reduce expenses, as well as the advantages of market organisation and the like which characterise the state of development of the industry in which the particular business is concerned. Where the conditions of decreasing costs prevail, an enterprise which cannot anticipate the attainment of a full share in such economies will need to count on some counterbalancing advantage special to itself, in order to meet the "representative" business in competition without sacrificing part of that profit which is the inducement to its organisation. If, on the other hand, special conditions enable effective organisation on a larger and more economical scale than that of the "representative" business to be undertaken, no more of the profits of such economy will need to be sacrificed than suffice to enable the large output to be profitably marketed; that is to say, that the cost of production in such exceptionally placed businesses will not be the costs which condition the extent of the total supply. This could only be the case if the industry were in process of passing over to monopoly conditions. In that event, the exceptional advantages of a large scale of production might be counted on to enable a ruinous competition with smaller businesses to be maintained.

In providing the productive equipment for industry under conditions of increasing returns, then, the cost of production, which is the basis of the estimate of whether such provision of equipment promises profit, is the cost incurred by businesses which are "representative," in regard to magnitude of operations, and in access to facilities connected with the industry, either as matters of internal business organisation or of general industrial organisation. If the supply of producing facilities is to correspond with the demand for the commodity, the value of the commodity must be (anticipated to be) on the level of the cost of production thus conceived. The momentary supply is dependent on the actual means of production available, the adjustment of those means to demand depends on the relation of value to cost of production interpreted on the lines just laid down.

Further, if conditions of increasing return prevail, and numerous competitors are engaged in the supply of the goods concerned, a temporary equilibrium implies the attainment of conditions corresponding to those which guide the investment of capital as just contemplated. If an equilibrium exist, there cannot be a sufficient reason for modifying the prevailing conditions of supply. The representative producer will, therefore, be under no inducement either to increase or to decrease his scale of production. This can only be interpreted to mean that there is realised in fact an output, and a profit, corresponding to that in view of which the investment was undertaken.

As has been stated above, in most cases where decreasing costs accompany an increase in the scale of operation of an individual producing establishment, a point of maximum economy exists corresponding to the most complete utilisation of the appliances provided, and the fullest employment of all the capacities for work and for management which are available. By the nature of the case, the extension of output, by a small amount, at this point, would mean additions to expenses just in the proportion of the addition to output A large change would mean additions to expenses in greater proportion than the addition to the output. Just at the turning point from decreasing to increasing costs, that is, at the point of maximum economy, the marginal expenses per unit become identical with those average expenses which cover prime costs and supplemental costs together, and represent the proportion of total expenses to total output. If we could suppose it possible to utilise to the full, at all times, the appliances provided, we might expect the point of maximum economy to be the point, the cost of production corresponding to which would measure the price at which the goods could profitably be supplied. But it is only at busy times that the appliances are fully utilised, and at ordinary or dull times they are often more than sufficient to permit of realising the greatest possible economy. Hence, in practice, at ordinary times some part of the productive apparatus lies more or less idle, the point of maximum economy is not reached, and the costs which measure the price at which representative producers can place the goods on the market are not marginal costs of production. It is possible to look at the case from the point of view of a period of production long enough to include both busy and dull times, and to treat rather of the maximum economy, of utilisation of appliances, practically possible than of the maximum economy technically possible. The costs which condition supply are then somewhat greater than those corresponding to the highest technical efficiency of the appliances of the representative establishment, except when those appliances are being used to the fullest extent. Generally, therefore, these costs will not be marginal costs.

We see, then, that where the supply of commodities is regularly organised for a market of reasonable steadiness, that supply is enlarged or restricted in accordance with expectations of profit, which expectations are based on a consideration of expenses on one side, and the prospect of realisation of a value sufficient to cover them with a profit on the other. In a case of such steady supply, it is possible to estimate the value anticipated by a consideration of the expenses undertaken. Such a measure has a concrete reality about it which does not belong to the estimate of the marginal utility, though this likewise may serve as the measure of value. It is not to be wondered at, therefore, that these expenses or, as it is commonly said, the cost of production, has been made to serve as the gauge of the value produced. It is necessary to be wary, however, in regard to the relation between cost and value. As shown, were cost negligible, value would be non-existent. Without cost, or rather without the scarcity which cost connotes, value would not appear. In this sense cost may be said to be a cause of value. But cost alone cannot be considered as the source of value. Were utility not present, scarcity, and its correlative cost, could not call forth value. Value is, in fact, the joint product of utility and of scarcity, and, of the latter, cost is, in the majority of cases, an index.

If we may assume effective competition on both sides, that is, both on the side of buyers and on that of producers and sellers, the establishment of a definite value for a commodity results in a situation which may be briefly summed up thus. All who set upon any supplies of the commodity a valuation not less than the exchange value, will secure the supplies thus valued. On the other hand, all who can produce, and bring to market, supplies at a price not exceeding the exchange value are induced to do so. If the amount thus brought forward be sufficient, and not more than sufficient, to meet the requirements thus called into being, there is no reason for a change in the level of exchange value. If not, then some change will be likely to result, which may be said to aim at finding a value which will fulfil this condition. Many desires remain unsatisfied, perhaps, but they are desires the strength of which is insufficient to secure the commodity at its current value. Many would-be producers may fail to find employment for their energies in producing the commodity, but that is due to the fact of the value resulting from their efforts being insufficient to yield a sufficient recompense.

Modifications of value may arise from changes of either the utility or the conditions of production of the commodity whose value is in question, or changes in regard to other commodities in reference to which its value is estimated. Considerations of the former nature cover sufficiently what may be said of the latter. Changes in the utility of a commodity, or, what amounts to the same thing, in the estimate of its utility formed by a would-be consumer, may arise from changes of taste or of habit, and education and surroundings constantly produce profound changes of this kind. The influence of judicious advertisement must be sought, in great part, in the fact that it induces a belief in the utility of a commodity in minds previously not much impressed with that belief. As to habit, the fact that a demand for a commodity can be relied upon to last, if the habit of using it be once formed, is sufficiently well known, and that efforts to effect changes in such habits are made by astute dealers is also well known. When such changes in the estimated utility of a commodity have taken place, unless a corresponding change has taken place in its supply, a change of value is sure to result, in fact this change is the index of the change of utility. The gradual growth of the habit of using tramcars requires, for example, a great increase of accommodation to carry all who wish to travel, especially if the desire to travel is stimulated by lowering fares. The growing habit of desiring to use a tramcar probably counts for at least as much as the cheap rates nowadays demanded for that accommodation, and the improvement of the accommodation itself.

Changes in conditions of supply arise from new discoveries, either as to natural sources of necessary elements for the production, or from inventions affecting the elaboration of those elements, improvements in chemical or mechanical processes, for example, or in business organisation. Changes tending to restrict a supply may, of course, also take place.

A value once established for a commodity, is not, then, something permanent in its nature. If the term "normal value" be applied to it, it is only so long as the conditions of which it expresses the normal outcome are unchanged. Normal values undergo progressive changes as time passes. This is very necessary to bear in mind, because of an involuntary tendency to regard a normal value as a point in some way fixed. What is normal under one set of conditions may be far other than normal under a changed régime.

## CHAPTER V

# SOME SPECIAL PROBLEMS OF VALUATION

IN the preceding discussion of value there has been contemplated the organisation of producing establishments with a view to the production of a single commodity, and a demand for that commodity without regard to any association of it with others for actual use by the consumer. It need hardly be remarked that such conditions do not by any means cover the range of existing facts, even if they represent any considerable part of them. This method of procedure, however, is desirable, indeed necessary, as a preliminary to the examination of more complex cases. Some of the typical conditions of these less simple cases will now be considered briefly.

First, consider the case of the simultaneous production of two commodities in a single process of production, as when gas and coke, mutton and wool, wheat and straw, or the like pairs of products, are secured as the results of processes the expenses of which are largely, if not entirely, joint expenses, that is, such as would remain unchanged if one of the products should cease to be marketable. In this case, how can we arrive at, or can we arrive at, separate determinations of the prices of the two joint products? In many cases there are other products besides the two chief ones, but we shall first consider the problems introduced by the second product of the industrial process, as if there were none but the two.

There are two points of view from which the problem may be regarded. We may take note of the fact that the process of production results in quantities of the two products which bear a definite relation to each other, and one of which cannot be changed without a corresponding change in the other. Regarding this feature alone, it affords a basis for the required valuations. For illustration take the case of the crushing of cotton-seed in relation to the two most valuable products, cotton-seed oil and oil-cake. In rough, general figures, a ton of seed yields about one-third of its weight of cake and meal, and about a hundred gallons of oil are obtained to each ton of cake and meal. Taking these proportions, the mill-owner needs to find markets for as many tons of cake as he produces hundreds of gallons of oil. He must, therefore, assign such relative values to these goods as will evoke demands in the named proportion. If, for each ton of cake, he can sell but ninety-five gallons of oil, either the cake is valued at too low a figure, or the oil at an excessive figure, or both. If, on the other hand, he can sell only nineteen hundredweights of cake for every hundred gallons of oil demanded, the oil is offered too cheaply, or the cake priced too highly, or both. When the prices are properly adjusted, the amounts of the two commodities demanded will be in the proportion in which they result from the crushing process. For the products jointly, the relation of cost of production to value will follow the principles already examined for single products. Having arrived at a principle for their relative valuation, the needed additional feature in the solution of the problem of their separate valuations is supplied.

But a second point of view may also be considered, and throws useful light on this class of problems. For illustration take the case of milk production. The quality of the milk produced may be varied a good deal by suitable choice of animals and suitable feeding. A farmer whose milk yields a pound of butter for every twenty-four pounds of milk may consider that he would gain by such changes as would cause a yield of butter of one pound from every twenty-three pounds of milk. The products, butter and skim milk, are not yielded in invariable proportion. Under these circumstances the cost of a given amount of the single products can be determined in addition to their joint cost. The richer milk can be secured at an increased cost, and the question to be considered is whether it is worth while. If it be wholly a question of whether it is worth while from the point of view of whether the increase of expenses is worth incurring, the direct comparison of the increased cost of securing the richer milk with the value of it when secured yields the answer. The extra richness of the milk is secured at a definite price, that is, the separate cost of an addition to the butter yielded is observable, and thus, though the butter is a product necessarily associated with others in its processes of production, its marginal expenses of production admit of separate examination. Such a separation of the specific marginal expenses of joint products is possible in numerous cases, and thus the resort to the preceding mode of treatment is not essential, at any rate when the conditions are not those mentioned in discussing increasing returns. When the marginal cost, as thus determined, corresponds to what was there discussed under the name "prime cost," the distribution of the supplementary costs, among the various joint products, necessitates a recurrence to the considerations to which attention was directed in connection with the assumption of invariability of proportion between the quantities of the different joint products. The point of view now presented, of an effective separation of the costs of the different products, does not lead to results contradictory to those previously presented. Where both methods can be applied, they will lead to the same result. In general, the case of joint products more numerous than two can be treated by similar principles. We shall give some further consideration to the case later in the present chapter in some brief remarks on the railway rate problem.

Corresponding to the case of joint production is the case of joint use or consumption. A carriage needs horses or a motor, a steel knife-blade needs a handle, and many useful commodities are made from two or more different raw materials. The demand which expresses consumers' desires is a demand for a combination of materials, and the demand for the separate materials, by the producers of the commodities, is derived from the consumers' demand for the combinations. The problem before us is to determine the separate marginal utilities of the components, a necessary enquiry when any of the components has few or no uses except in the combination.

A simplification of the problem is possible in such a case as that of the knife. The part of the value of knife and handle which may be assigned to the blade, so far as its material is concerned, is sufficiently definite apart from variations in demand for knives. The uses of steel are so many and various, that the demand for steel is only affected in a quite insignificant degree by the greater or less amount of it needed for knife-blades. The value of the steel of the blade may be said to correspond to the marginal utility of steel in its multifarious uses. Hence, the marginal utility of the knife being ascertained, the deduction of the value of the steel gives the marginal utility of the handle and workmanship. If it be desired to proceed further, the workmanship may be similarly treated to the steel, and a residue obtained of marginal utilities, corresponding to different amounts of supply, which represents the effective demand for handles. As, in some cases at any rate, the demand for the purpose of forming knife-handles constitutes a large part of the demand for the material used for that purpose, it is important to ascertain how the demand and supply of such material stands. The solution offered is only approximate, since it assumes that the variations in the volume of the demand for knives are entirely without effect on the marginal utility for all purposes of the constituents other than the handle.

The more general treatment of the problem is on lines corresponding to what was done for the second point of view of joint products. The joint demand for malt and hops, for example, as united in beer, may be satisfied by different combinations of the two constituents named. When the most advantageous combination has been determined by a brewer, that is, the proportions which yield the most profitable results, these proportions admit of variation, and, for small variations, economies on the side of expenses will be balanced, but not outweighed, by losses on the side of sales. Thus the marginal utility of each constituent admits of separate examination.

A case having some features of close analogy with the preceding is that of alternative demand or supply, where the principle of substitution applies. Where a service of a particular kind can be rendered by either of two or more commodities, the influence of competition is to direct demand toward that commodity which renders the service most cheaply or efficiently, or most cheaply relative to the efficiency. This replacement, of one mode of doing a thing by another, modifies the demands for the different commodities, and, if the process be conceived as carried to its logical limit, that limit will be characterised by such prices of the commodities that the satisfaction or service is purchased equally cheaply by whichever commodity it is rendered. The applications of the principle of substitution are innumerable. Light, for example, may be secured by the use of candles, oil, coal-gas, or electricity, and the prices of the several supplies will be affected by the cheapness and convenience of the other sources of artificial light. The competition of coal-gas and electricity is a modern phenomenon of great importance, and has not been confined to rivalry in cheapness, but has affected the development of methods of securing increased brilliancy from coal-gas by means of incandescent lighting. The wide application of the principle of substitution will secure further illustration in due course, as cases where it is important come up for consideration in subsequent discussions.

The case of composite demand, that is to say, of many uses for one and the same commodity, presents a very common case, but one so closely similar to the ordinary case, of many consumers demanding the same commodity for like uses, that no words need be spent in developing the case of requirements for unlike uses.

Our next special case of value will be that of a monopoly of supply. The complete control of supply suggests to the unreflecting a power of arbitrarily determining price. That power is, undoubtedly, a necessary concomitant of this condition, but we need to consider what affects willingness to put the price at a higher or lower level as well as what affects the power to do so. The profit to be secured, from fixing the price of a commodity at any given level, depends on the amount which can be disposed of at that price-level. The price per unit, multiplied by the number of units sold, gives the total remuneration, and the excess of this over the expenses of producing the same number of units is the amount of the profit. Now the expenses of production, as we have seen, are not usually unchanged, either as a total, or in proportion to the amount produced, as that amount is varied. Thus the discovery of the scale of output, and of sales, which will yield the greatest total profit, is a matter of importance. A smaller profit per unit, reaped from a larger number of units, may easily afford a greater total of profit than would be secured from a smaller output, even with a higher profit on each unit of output. The fact, then, that high prices restrict sales, is a reason why a monopolist should not find his interest in extravagantly high prices. The further fact, that the majority of commodities can be replaced more or less effectively by other commodities, gives point to this consideration, since the complete control of the supply of any one commodity may not be, and often is not, the complete control of the means of rendering the service, or affording the satisfaction, which the use of that commodity commonly renders or affords. Where substitutes are readily found, a slight rise of price may greatly diminish sales, and make serious inroads into profits as a consequence. Even if substitutes are not well known, the fixing of an extravagant price for a commodity may induce a search for substitutes, or for means of adapting some known article to serve as the substitute in question; or it may lead to a substitution of a new form of gratification for one which has been subjected to the restraint of a high price. With a view to future possibilities, then, as well as in consequence of actually present conditions, the level of price which will yield the greatest, and most permanent, profit to the monopolist may be not far above the level of price which competition would secure. It is claimed, further, that economies, associated with concentration of the control of production, often afford an abundant profit to a monopolist without necessitating the elevation of the price above the level at which competition would fix it. While these theoretic considerations are of no small importance, it is an obvious fact that the power to advance prices acts as an inducement to do so in many cases, including some where such an advance brings into play the influences to which reference has been made above, and is in reality detrimental to the pecuniary interests of the monopolist. A rise in price seems so much more simple and direct a method of securing increase of profit than the laborious exhaustion of possibilities of economy in production, or appears to offer such an easy addition to gains from these sources, that monopolistic control of supply is more generally associated, both in practice and in the thoughts of most persons, with a rise of prices than with a fall. The absence of that restraint on profit which arises from the competition of other producers of the same commodity, and of the stimulus to seek, in improved methods of production, the profit which competition prevents from being secured from elevation of price, operate so generally to the prejudice of the consumers, that the wastes of competition are less regarded than the dangers of monopoly, even combined with the economies of centralised production.

If we assume that the monopolist seeks to secure the largest possible net profit, he will seek to arrange his supply and price at the amounts such that either a smaller supply with a larger profit per unit, or a larger supply with a smaller profit per unit, would reduce the total of profit. In the one case the increase of profit per unit is outweighed by the decrease of the amount on which profit is earned, in the other the increase in the amount on which profit is secured is outweighed by the decrease in the profit on each unit. Such a point must exist, since the profit on an insignificant amount of sales is clearly insignificant unless the price can be imagined increased without limit, while, at the other extreme, the fall in marginal utility of the goods must at some point bring the marginal utility below cost of production, and thus mark a scale of supply at which profit would vanish. Between the extremes of the vanishing of profits, through disappearance of all demand at an extremely high price, and through decrease of demand-price through extension of supply, the point making the maximum of profits will be found. Whether the profits of a monopoly are great or small depends on the nature of the case. Mere monopoly does not guarantee profits, and a producer compelled to exercise a monopoly privilege might find that he could secure less profits than if he were to transfer his energies and resources to some competitive line of production. On the other hand, if the monopoly privilege yield profits greater than could be secured in a competitive industry, the fact of monopoly shields the monopolist from the reduction of profits which the admission of competitors might ensure.

When the profits, either of a monopolist or of a producer under competition, fall below what equal ability could secure, with equal risk, in other lines of enterprise, the difficulty of transferring capital to other employments may stand in the way of equalisation of profits with those obtainable elsewhere. Only if enterprise were able, on the one hand to enter freely into, and on the other to forsake without loss or difficulty, any trade, as its profits might attract or repel, could anything like a uniform rate of profit be supposed existent, even for equal risks. Competition, where it exists, does tend to keep profits in different trades from being widely different, and to divert enterprise from less to more profitable lines as the means by which that end is attained. If there be not in existence such a disposition among buyers as leads a sufficient section of them to refuse to pay more, for a commodity, to one dealer than would secure it equally conveniently from another, there cannot be postulated that uniformity of price, at one and the same time and place, for the same goods, which is assumed throughout the preceding discussion. In wholesale markets the assumption is fairly justifiable. It only applies quite partially to retail dealings.

Attention has already been given to the difficulties associated with the determination of the cost of production of joint products. In practice this case is one of very frequent occurrence, and an extreme case, illustrating a large and important class of problems, is the problem of the determination of railway rates. A very large part of the expenses of a railroad are not specially incurred in connection with the rendering of any specific service or class of services, but for the maintenance of the general equipment. Incidentally they afford facilities for special classes of traffic, and all kinds of traffic would suffer from inadequate provision for these general expenses. It is only in respect of the special outlay associated with a particular shipment, or class of shipments, that we can arrive at the direct cost of the service rendered. For convenience of treatment the following rough division of expenses may be made:—

($\alpha$) Cost of loading and unloading and cost of labour and materials used in forwarding any particular consignment. If the consignment form only a fraction of a train-load, a large part of these costs is shared with other consignments To avoid confusion, let us assume that a train-load is dealt with.

($\beta$) Maintenance of road-bed and rolling-stock and general expenses of railroad staff. (i.) If special rolling-stock is required for the traffic in question, its cost of maintenance may be treated as special to that class of traffic, though not to the particular consignment. (ii.) If no special cars, etc., are reserved for that class of traffic, the cost of maintenance of cars, etc., is shared with other classes of traffic.

($\gamma$) Payment of interest on bonds and dividend on stocks.

Were the expenses under the heads ($\beta$) and ($\gamma$) to be divided *pro ratâ* among all the traffic, at an appropriate ton-mile or other uniform rate, a fiction of regulating rates by cost of service would be maintained. But it would be only a fiction, since such a *pro ratâ* division lacks rational justification. The general principle followed in practical settlement of rates is known as that of charging "what the traffic will bear." It may be expressed somewhat as follows. The rate charged must cover at least the expenses ($\alpha$). These expenses are loaded, for each class of traffic, on the principle of making that traffic yield as large a contribution as possible towards ($\beta$) and ($\gamma$). In accordance with principles examined earlier in this chapter, it appears that an attempt to overburden any special class of traffic might lessen its total contribution, by reducing its volume in greater proportion than the increase of rate would compensate. Regard will probably be paid, not merely to actual volume of traffic, but also to prospects of future profit from development stimulated by low rates. All classes of traffic will not yield equal contributions to general expenses. Some kinds may yield small amounts, others large amounts. From points where competition is met, rates may be quoted yielding but little to these accounts, on the ground that higher rates would result in not securing the traffic, and that the traffic does, if secured, yield something beyond cost of handling. Naturally, an important consideration is introduced when facilities do not exist for taking all the traffic which offers at rates possible to quote. In that case, there will be a tendency to accept the more remunerative and to raise rates against the less remunerative, perhaps to a prohibitive level.

It is suggested above that any rate which combines the two points (i.) of affording some surplus over the class of expenses included under ($\alpha$), and (ii.) of being such as to make that excess as great as is possible to secure by any variation of the rate, would be acceptable. This needs to be qualified whenever the case contemplated in ($\beta$) (i.) occurs. Unless the surplus is adequate to cover such expenses, there is no gain in affording the service at the rate in question, which is, by hypothesis, a rate yielding the utmost to be secured from that class of traffic.

With this qualification, the main considerations affecting the fixing of rates, where no regulation interferes, have been indicated. The surpluses, over expenses of handling, which rates yield, being each as large as possible, their aggregate will also be as large as possible. Unless this aggregate suffices to cover the expenses of class ($\beta$), the railroad, even if constructed, would only be operated at a loss, and unless change of management were to secure a reduction of expenses, or a better exercise of judgment in applying the principles on which rates are determined, the abandonment of the road would involve less loss than its continued operation. The existence of such conditions would indicate that the construction of the road had no justification in the ability of the district it served to afford remunerative work for it.

In general, the aggregate of surpluses previously referred to must cover expenses of class ($\gamma$) as well as those of class ($\beta$). Should they fail to yield an amount adequate to this, the proof thus given of the unremunerative character of railway enterprise in the district served would operate as a check to subscriptions of capital for other lines, or for extensions in that district, which difficulty could only be removed by such development of the district as would afford remunerative traffic to the road which served it, and an adequate amount of such traffic.

If the surpluses aggregate enough to yield an unusually large return to capital, either or both of two changes may follow. Competing lines may be built to share in so remunerative a traffic, and may divert enough traffic to reduce the amount available for dividends to a less attractive level. Anticipating such a movement, and as a means to avoid the competition otherwise likely, or under the pressure of public opinion or of legal enactment, rates may be reduced, on important classes of traffic or sections of the line, to a level below that at which they respectively yield the largest net return securable from that traffic, thus dividing between users and owners of the line the advantages which it is in a position to afford.

It is not proposed in this place to give any complete treatment of railway problems, but merely to indicate the general principles on which the supply-prices of members of complex groups of joint products are determined. Another case of the problem is the division of the general expenses of a large retail establishment among the different lines of goods dealt in. Here again the principle of "what the traffic can bear" must be applied. Each line of goods will bear, not a share of establishment charges which it must bear, in the sense that its own existence would be threatened if the profit required to cover that share of charges could not be made, but what it can, subject to the condition that all these, larger or smaller, contributions to profits shall together suffice to yield a satisfactory dividend. It would not be difficult to multiply instances requiring the application of the same general principles.

In discussing the general principles of value, the case of a supply definitely limited in quantity, independent of the willingness of men to devote time and effort to procuring supplies, called for attention. It may be noted that, when we consider the equilibrium of supply and demand at any instant, though supplies could be, and will be, varied in the course of time, perhaps a short time, the momentary situation is that of fixed supplies, and the considerations appropriate to a supply rigidly limited may be applied.

Corresponding to the case of a fixed quantity supplied is the case of supply at an invariable price. When more than one commodity is offered on these terms, a peculiar interest attaches to some phases of the problems which result. As the condition is approximately realised in the case of railway or tramcar passenger services, additional light on part of the preceding discussion may be obtained by giving special attention to this aspect of the case. The fares may be taken as fixed by authority or by custom, so that the equilibrium of supply and demand must be effected, if at all, by providing just that amount of accommodation which is called for at the fares fixed. The amount of supply must be adjusted to the demand at the price, which is not open to adjustment. As in other cases, we shall find the marginal utility of the commodity (*i.e.* of the service rendered) to be measured by the price. The questions affecting supply are limited to those relating to whether the service can be made to pay at the fares fixed. If not, the hypothesis, that only such supplies of goods will be forthcoming as are remunerative to producers, would lead to the conclusion that the service will not be rendered at all if the fares are too low. If the fares cannot be raised, the supply must either be entirely lacking or be adequate to the demand at the fixed fares, or else there may be no balance of supply and demand. The latter condition may be illustrated by the case of cab-hire where fares are fixed by authority. The supply of available cabs may readily be conceived to be less than sufficient to meet the demand at the authorised fares, and accident may determine whether the available cabs are used by those who are most willing to pay, or by those who would be restrained from using cabs if fares were raised somewhat. There is, in these cases, a further feature, which was held in view in making the above statement that the condition is approximately realised in the illustrative instances referred to. The service may remain nominally the same but be really changed. A crowded railway-carriage or tramcar is not quite the same thing as one with plenty of room for all its passengers. An upholstered carriage is more desirable to the traveller, as a rule, than one with uncushioned wooden benches. Slow conveyance is not the same service as quick conveyance. Variations in the adjustment of supply to demand can, therefore, be effected without nominal alteration of price, by a change in the commodity offered while its designation is unchanged. Where the balance of supply and demand is sought in this manner, it cannot be strictly said that the commodity is offered at an unchanged price.

A further illustration will show another method of effecting the partial adjustment of demand to supply, without acting on demand through price, and may lead to complete adjustment. The price of admission to the gallery of a theatre being fixed, and its accommodation, even with such extension as uncomfortable overcrowding permits, being limited, the adjustment of the fixed supply to the demand called forth by the fixed price, when this is in excess of the available accommodation, is partially effected by the practical method of the attendance of eager competitors for places before the doors are open. The discomfort of a prolonged wait, first outside the door and afterwards inside, before the performance begins, may be regarded as a real addition to the price paid in money for the place. Similar waiting, which may, however, be done by deputy, may be necessary even in the case of seats which are booked beforehand. Where seats are distributed, not to those, of all would-be occupants of them, who are willing to pay most, but on the principle of "first come, first served," supply and demand may not be equated, even by the operation of the restraint on demand which the necessity of paying in inconvenience as well as in cash imposes. The raising of the price of seats on special occasions is an effort to effect some part of the adjustment of demand to supply, in a manner more profitable to the managers of an entertainment than the exaction of the whole addition to the ordinary price in the form of inconvenience endured.

Some attention having been given already to that side of the subject, we are not here entering on the consideration of the profitableness or otherwise of the business of providing a commodity or service at a price fixed by authority or custom, or the principles which lead to the fixing of one price rather than another for the goods or services, in regard to which the variation of the price from time to time in accordance with the changes in cost of the goods or services is practically out of the question. The consideration here given to the problems involved takes for granted the fixed price, and some of the results of its being a fixed one are traced.

## CHAPTER VI

# THE PROBLEM OF INTEREST

### THE SHARE OF CAPITAL IN DISTRIBUTION

IN dealing with the value of capital, we are confronted with two interpretations of the word. These interpretations correspond to, though they are not entirely identifiable with, the two senses of value, namely, value-in-exchange and value-in-use. With capital, the two uses of the term correspond to the difference between a general control of productive appliances, and particular appliances appropriated to special uses. In the latter connection, we are concerned with the valuation of goods whose services to their possessor are not direct, instrumental goods as they are sometimes called. Their value is arrived at by the application of principles already discussed. The demand for them is derived from the demand for the consumable goods in the production of which these instrumental goods are used. The supply is, as with other goods capable of being increased in amount in response to demand, controlled by considerations of the relation of their cost of production to the utility they possess as instrumental goods. That utility is related to the supply, as in other cases of value. Whatever may be the case as regards capital in general, it is true that the continued increase of the quantity of one particular instrumental good, which is associated with any given aggregate of other means of production, will not result in a continued proportionate increase of values produced. If more capital is to be employed in the industry in question, it will be given a variety of forms. Indeed, the employment of more capital may lead to an abandonment of some (perhaps many) of the older forms of instruments, and their replacement by other, more efficient, instruments. This substitution is stimulated by the decrease of the marginal utility of each individual instrument as its supply is relatively increased. To take an example, imagine the equipment of a railroad increased by the increase of one single item, say of locomotives. It hardly needs proof that the additional services capable of being secured from each successive locomotive, when the railroad is once fairly equipped, will steadily, perhaps rapidly, decrease, till the stage is reached at which the cost of additional locomotives exceeds their value to the railroad. An increase of capital represented by locomotives might take place, not by multiplying engines of one pattern, but by the construction of new and more efficient patterns. Here, too, it hardly needs proof that the utility of additions to capital is on a decreasing scale. The same considerations as have been applied to the case of locomotives may be applied to other forms taken by railroad capital, such as special classes of rolling-stock, sidings, etc. It would thus appear that, in each particular industry, apart from new devices in production, the utility of continued increments of capital proceeds on a diminishing scale, and that whether we think of specific forms which the capital may take, or of the general increase of capital values concerned in the industry. The introduction of new devices, or discovery of new principles which cause a change in the processes of production, may afford scope for the utilisation of more capital without a diminution of its marginal utility, but the effects of such improvements, in finding place for the profitable introduction of additional capital, are as liable to exhaustion as is the stock of knowledge available at any given time. Thus we may make use of the principle of diminishing utility as affecting capital, both specific instrumental goods and the group comprising all kinds of such goods, with the same propriety as in the case of demand for goods directly consumable. The adjustment of supply to demand encounters some difficulties, arising out of the fact that the instrumental goods are a means of procuring consumable goods at a more or less distant date, and it must, therefore, be anticipated demand for those consumable goods, combined with knowledge as to the efficiency of the instruments in producing them, that leads to the demand for the instruments. The correction of inaccurate estimates of the demand for the commodities can only result from experience, and hence we may expect that the adjustment of supplies to demand, at any rate to demand at the anticipated level of value, will be less prompt than in the case of commodities whose preparation needs little preliminary provision of materials and instruments of production. Investments of capital, that is to say the giving to capital of specific instrumental forms, are made on the basis of anticipation of future conditions. The change of the forms of capital can only be effected slowly. Hence we might reasonably expect a considerable lack of adjustment, between the forms, and the total amount, of capital and the demand for that capital arising out of the productive services it can render. The actual utility of existing capital, like the marginal utility of a given fixed quantity of a particular consumable commodity, is a result of actual existing conditions. The supply of capital, both as a whole, and in the various forms it may assume, may be either greater or less than would be worth producing in order to secure the value represented by actual marginal utilities.

Capital which exists as a particular instrument of production, whether materials, buildings, machinery, or other form, be in question, has a marginal utility which depends on the actual supply of that particular instrument in relation to the demand for the services it can render. The increase or decrease of the supply results from the relation of this marginal utility to the cost of production, modified by anticipations as to the changes which the marginal utility may undergo in the future. The more enduring the form of the particular instrument, the more remote the influence on its value of possible or probable changes in its supply stimulated by this relation of utility to cost of production.

In dealing with the question of the value of capital, and with this as a particular application of the general principles of value as dependent on demand and supply, we are induced to specify two problems, the one relating to the existing supply of capital, in more or less specialised forms, considered as a store of capital; the other relating to the supply of new capital, considered as a stream. The capital in the store is mainly in forms which cannot be applied to any purpose other than that for which the form was designed, without loss of efficiency. The stream of new capital may be given whatever forms seem most likely to render it most effective. Regarded as a supply, its units may be treated as interchangeable with one another as freely as different coins of the same denomination. We have already given some attention to the conditions determining demand for new capital. The anticipations of being able to so use it as to cause it to return more than it costs are the sources of such demand, that is to say, the field of profitable investment is the determining feature. This is partly found in extensions of existing enterprises, partly in new ventures. The probable yield from such investments will need to be estimated after making allowance for risks of loss or of irregular returns, and also for services of management, before the demand-price for the use or control of capital, merely as such, can be arrived at. The field of investment may present opportunities for the employment of small amounts of capital so as to give a large yield, but, the larger the amount of capital for which there are desired investments, the smaller the net yield below which expectation of return is not required to sink. So far as concerns the extension of old lines of investment, experience may afford a more conservative estimate of probable net yields than is entertained where new ventures tempt the investor. The estimate of the risk is not made alike by all investors, and equal gross yields may represent very different net yields, very different demand-prices for capital, to different investors. This is a feature of the constitution of the market for the loan of capital which must not be ignored. Actual investment of new capital may take place in old enterprises; that is to say, the owner of the uninvested capital may exchange his command of fluid capital for the ownership of capital already invested. The new capital is not, however, finally disposed of in this fashion. The new investor is, perhaps, spared the difficulty of gauging entirely unknown risks, by taking over property the history of which is a guide to the relation of gross to net return which may be fairly anticipated from it. A more experienced head, possibly, is given control of the selection of the investment of the newly-formed capital. In some degree this exchange tends to put control of new capital into the hands of the more adventurous spirits, whose estimate of the risks is likely to fall below the sound actuarial value of those risks, so that experiments are tried of more unpromising appearance than would be tried by more cautious men. How far this is disadvantageous to the community must depend largely on the balance between success and failure achieved, for unpromising ventures are conspicuous successes in some instances as well as ignominious failures in others.

The supply of capital available for new investment must now be considered. It is not confined to the new savings of the community, as appears at first sight, though these are all that form real additions to the store of capital. The annual product of the labour and capital and land of the community affords the source, first, of what is required to make good all wear and tear of instruments and all material used up; and, in addition, of what is available either for savings or for expenditure in ways selected without reference to their bearing on production. In the first part we must include what is needed to maintain the supply of human agents of production as well as of other agents. Perhaps, further, the making good of wear and tear should be conceived of, not from the point of view of the least which could be effective to that end, but rather in relation to what, in the actual state of things, will actually be required. The second head covers the saveable surplus, and the actual amount of saving which takes place will be dependent on the dispositions of those who own this surplus, and on the strength of the inducements to allocate it to the service of present or future cravings respectively. Of great importance in turning the scale between future and present, is the gain that may be expected if consumption is delayed. The satisfaction experienced from the contemplation of supplies of a given commodity, or of goods in general, at a future date, is less than is experienced from the contemplation of supplies of equal amount and otherwise identical, but available now rather than in the future.

This lower estimation of future needs and satisfactions as compared with present needs and satisfactions may be expressed as a discounting of the future. The rate of discount varies with different persons, and perhaps with the same person at different times. With some the needs of the future are so vividly realised, and the doubt of future ability to make provision is so emphatic, that the rate is very low, perhaps even negative, that is to say, that, to be sure of provision for a future contingency, a present sacrifice will be endured corresponding to an amount greater than that future provision. Present savings for future needs are not checked in such cases, even though payment must be made for the safe-keeping of the stores laid up for the future. Were no revenue securable from savings, these would not in such cases cease to be made. Similarly with savings from incomes whose magnitude exceeds the needs which habitually demand satisfaction on the part of the receiver of such income. But in addition to such saving as is independent of earnings anticipated on the savings themselves, there is some which is stimulated by, and dependent on, the amount to be secured from the investment of the savings. Such savings have a supply-price, and the higher the price the larger the volume of savings. Two influences have been prominent, in the history of recent generations, as affecting savings. The one is the more vivid realisation of the need of making provision for the future, tending to enlarge savings, the other the fall in the amount yielded to invested capital, tending to restrain savings. With these, an enlarged fund from which savings are possible, and increased civil security, *i.e.* improved guarantees of the enjoyment of the fruit of savings, have also powerfully stimulated savings. The actual stream of savings is determined in volume, as the stream of supply is determined in the case of ordinary commodities, on the one hand by the return to be secured by the investment of the marginal amount saved, on the other by the resistance to be overcome to secure the saving rather than the spending of that marginal amount, that is, its devotion to the supply of future rather than of present needs.

The supply of capital available for fresh investments is not, however, as has already been stated, confined to the newly-made savings from current revenue, and, as a result, the statement just made needs some correction. While the actual additions to capital are limited to the new savings, some part of what represents a wear-and-tear allowance on existing capital may compete with new savings for employment in new ventures. The income received by a capitalist from his capital is, from certain points of view, rightly divided into what is needed to maintain his capital, that is to replace materials used up and make good wear and tear of machinery and the like, and into the amount remaining after such maintenance is provided for. This last amount alone can provide additions to the capital, but the capitalist may elect not to replace materials or machinery which is wearing out, and the funds which might have served this purpose may go to increase the stream of fluid capital seeking new investments. In corresponding fashion, the replacement of materials or worn-out machinery is a use to which funds may be applied which are not any part of the income afforded from the employment of such materials and machinery. The field of employment in which the rate of interest is determined is thus wider than that with which new savings proper are concerned. Capital not newly saved, but merely freshly disentangled from some previous concrete embodiment, takes a place alongside the newly-made savings as a part of the supply whose marginal supply-price is the rate of interest. On the other hand, the field of investment for fluid capital is not limited to new enterprises and extensions of old enterprises, but comprises also the reformation of instruments which have exhausted their services as capital in aiding in the formation of current income. The demand for capital, of which the marginal demand-price registers the rate of interest, is, in fact, wider than the demand from fresh enterprises considered above. These extensions of the conception of what constitutes that demand for and supply of capital which determine the current rate of interest, do not alter the nature of the considerations indicated as governing that rate. They do operate to bring into closer contact the actual yield of capital which cannot, for the time, be withdrawn from its investment, and the prospective yield of capital free to choose any of the avenues of investment for fluid capital. Though capital cannot, generally speaking, be freely transferred from one enterprise to another, some transference can take place, and the portion of capital thus transferable must be added to that not yet committed to any investment to determine the aggregate of what is available for investment.

Why do we not adopt the plan of considering together all capital, old or new, invested or free, and all opportunities of employment for capital, occupied or not, in discussing the rate of interest? Mainly because actual instrumental forms of capital can only be regarded as forms of capital, and are not able to be dealt with on a footing of equality with free capital. Free capital can avoid a less promising investment in favour of a more promising one, but invested capital must, for the time, remain in the investment in which it is, however unprofitable it may have turned out to be. The owner of free capital can become the proprietor of such invested capital, but the exchange must be effected, not on the basis of the cost of the invested capital, but on the basis of its earning power. Its value is estimated as equal to that of so much free capital as would, at the current rate of interest, yield an equal net income. The proportion of that net income to the cost of the invested capital may differ in either direction, and to almost any extent, from the proportion indicated by the current interest-rate.

The borrowing and lending of capital is, under modern conditions, comparatively rarely a borrowing and lending of specific instrumental goods, and is still more rarely made on a contract for the payment for the hire of the capital to be made in other forms than that of the general representative of values, money. The borrower does not, in a sense, want to borrow money, but he first acquires money and then is free to exercise his choice as to the actual forms which shall represent the capital he proposes to use. He contracts to repay money and to pay in money for the hire of what he has borrowed. The savings, of which a good deal has been said above, are savings of money, or rather of rights to commodities the amount of which is estimated in money, say, savings of general purchasing power. General purchasing power is lent, is borrowed, is paid as the price of the control transferred by lender to borrower. Before it can be made productive, it must be transformed into such forms as buildings, machinery, materials, etc., as a rule. That could not be instantly done if stores of such goods were not held ready, that is, the actual productivity of a certain amount of purchasing power borrowed is dependent on the prices at which instrumental goods can be purchased, and consequently on the accuracy of the intelligent anticipation of the forms which new capital is to take which has been displayed by the producers of those forms. The test of that accuracy is the correspondence of the marginal demand-prices, offered by those who desire to acquire the instrumental goods for productive purposes, and the cost of producing those instrumental goods.

In the mercantile field there is use for a considerable amount of capital in the form of purchasing power, to assist in the exchange of goods. In the industrial field the capital must be used in the form of instrumental goods in order to be made productive. The contrast thus suggested is more in appearance than in reality, for the merchant only makes his money productive by becoming the possessor of goods, to which goods he imparts a further utility due to changes of the goods in place or in time. It is the changes of value of the goods which afford the profit on his operations. His investments of the purchasing power (money), which forms an important part of his capital, are thus such as to convert it into instrumental goods as truly as are the investments of the builder of an ironworks or a factory. The differences lie in the nature of the changes which take place in the goods in which the capital is embodied, and the great contrast in the length of time during which the investment in particular goods endures.

The capital which is productive, then, is not, strictly speaking, money capital, but instrumental goods acquired by means of the money capital. Dealings in capital are conveniently effected in terms of money, and interest is spoken of as interest on money. The market for capital is a market for values, while the utilisation of capital is a utilisation of actual instrumental goods, by means of which are secured other goods, whose values enable payment to be made of the borrowed amount and of a price for its use. The thing which is bought and paid for by interest is control of capital. The right to determine what forms of capital shall be utilised, and how they shall be utilised, is thus secured. The right of control of money is exchanged for a right of control of ships or ironworks or weaving sheds or other concrete capital. Because these things do not exist in unlimited supply, the right of control over them affords opportunity for rendering services the payment for which yields a profit.

Whence arises the productivity of which this profit is an expression? The answer is given in various terms. By some, reference is made to the increase in the amount of goods which can be produced by the aid of capital with equal labour, an amount so great as to outweigh the smaller utility which they have as future goods, as compared with present goods physically identical with them. By others, attention is directed to the fact that capital enables its possessor to adopt indirect or roundabout methods of production, and that these roundabout methods are more efficient than simpler direct methods. But what is the source of the greater efficiency of the roundabout method? That greater efficiency, be it noted, is not to be assumed to be in proportion to the indirectness of the process of production.

The source of this greater efficiency is to be found, in the main, if not entirely, in the fact that, in the roundabout processes, man's forces are either assisted by some of the forces of nature, or are applied so as to be less opposed by natural forces, than in the more direct processes. To achieve these results, knowledge is needed of how to secure assistance, or avoid resistance, from natural forces, and the devices to that end are the forms given to capital. Capital has been said to be the harness by which natural powers are guided so as to assist mankind in his efforts. The steam-engine serves to harness the expansive force of steam, and the more perfect its construction, the more are hindrances from other natural forces avoided, and the more completely is the aid secured which this is capable of rendering. The extension of knowledge enables the construction, or at any rate the designing, of better, more effective harness for nature's powers. Recent advances in electrical science abundantly illustrate this.

The roundabout process is more productive than the direct process, because the aid of nature, or the avoidance of natural hindrances, can only be secured when the appropriate appliances are provided. The provision of the appliances is therefore a preliminary to their use, and thus the process is indirect. The perfection of appliances frequently demands the provision of yet other appliances, by means of which to construct those we desire to employ. Thus increase of indirectness in the process often means increase of efficiency. Yet this is not so of necessity, and greater efficiency with greater directness may be the result of increased knowledge of natural laws, giving increased power to utilise natural forces.

Increase of capital to be employed in industry involves the progressive exhaustion of the productiveness of each of the several forms in which capital may be embodied. These forms are multitudinous, and hence exhaustion is not rapid. Further, new devices for applying capital in economising production are being constantly evolved, and this process retards the rate at which the diminution of utility of capital is manifested. If the process of invention be sufficiently rapid, the change may be in the opposite direction, that is, the means for utilising our knowledge of how to obtain aid from nature's forces may not expand as rapidly as our power to apply those means: the marginal utility of capital may increase rather than decrease owing to a *relative* decrease in its supply. It may also be noted that increase of knowledge may enable a simpler harness for nature's powers to be devised; a smaller capital may give greater results than were given by a larger one before the increase of knowledge; a less roundabout process may be substituted for one more roundabout. Such a reversal of the general rule is, however, no ground for denying the general validity of the assertion that more roundabout processes are more efficient, more productive, than those which are less roundabout.

What has been above said, as to the source of productiveness of capital, may be otherwise expressed by saying that improvements in the organisation of production, which are rendered possible by the aid of capital, have the result of rendering that production more efficient. When immediate needs do not require the use of all the goods in hand for their satisfaction, modes of organisation, which are more effective than those whose products are immediate, may be adopted. When ownership, or at least control, of capital has been secured, the efforts of to-day practically yield results to-day. A constant labour of production goes on, and a steady stream of products is evolved, which, in effect, affords payment for all the productive effort currently rendered, and leaves a surplus. As already stated, the owners of this stream of new goods have the choice as to whether they shall be consumed for purposes of immediate, perhaps transient, enjoyment, or as to how much shall be devoted to provide more perfect appliances for production. The forms, which the goods being currently completed take, depend on the knowledge, as to what that choice will be, possessed by those who direct the production, a knowledge based on experience, since men's desires, taken in the aggregate, do not undergo rapid and violent change.

It should be observed that the market for capital is not one single market, but is made up of several markets, in all of which the same commodity, the control of purchasing power, is bought and sold. The conditions of the market for capital to be devoted to long-period investment are somewhat different from those of the market for capital to be used in short-period investment. The interpretation of long and short here may, of course, be somewhat elastic. To some extent the supply and demand in the former market are distinct from those in the latter. The changes in the utility of capital, that is, in the conditions acting on demand, are especially liable to rapid change in the latter market. The manifestation of these changes may be due to changes in the degree in which the total supply has been distributed between the two markets, leading to a relative over-supply of the one and under-supply of the other. The willingness of investors, to dispose of their supply in the one or the other market, is mainly influenced by the estimation they put on risks running over long periods as compared with those which terminate quickly, and by anticipations of the probability of the occurrence of superior opportunities for investment in the near future, as compared with those available in the present. An over-estimation of long risks would lead to investment in rapidly maturing forms, even with lower net returns; an expectation of early improvement in the chances of making a profitable investment would have a similar result. Influences thus acting on the supply of capital, for quickly terminating investments as compared with slowly maturing risks, readily account for divergencies, between the loan-value of capital in the two cases, which may be observed from time to time.

The market for capital is thus not so perfectly organised, that all demands for its use at the same net price rank equally, and all units of supply are interchangeable. Certain parts of the market are peculiarly well organised, but there are other parts more or less shut off from the levelling influences of a market organisation. With such limits as are imposed by defects of market organisation, the statement may be made that the price of the control of capital, the rate per cent. per annum which is the expression of that price, tends to equality for all loans. This price, in practice, is not dissociated from the recompense for the risk attaching to the particular use to be made of the capital, and thus the gross interest on different loans is by no means uniform, and there is no economic force tending to make it so, but quite the contrary. That part of gross interest, however, which stands simply for the right of control of the capital, is, under competition, subject to influences which operate to render it a uniform charge. Though the market for capital is not limited by national boundaries, supplies of capital do not flow unimpeded over the whole world. Distance is, in some cases, a real obstacle to the lender, operating especially to cause the risks associated with a given loan to be estimated at an amount differing from their real value. This is readily intelligible, in view of the fact that distance is apt to be associated with ignorance of the real conditions under which the capital is to be employed. This ignorance may add to the real risk as well as to the estimate of what the risk is.

To some extent, then, different localities have their own demand for, and supply of, capital, and their own price for its loan. It is notorious that countries like England, France, and Germany are better supplied with capital, relatively to the opportunities they afford for its local investment, than are countries like Canada, India, or even the United States. The usual rate at which capital can be borrowed, the rate at which it pays to borrow, stands higher in the countries less well supplied than in those whose investment opportunities have been more completely provided for. In the former there remain fields of profitable investment the like of which have been long exhausted in the latter. Because the opportunities for making capital yield a large profit are more abundant, borrowers are able to offer more, and its relatively scant supply prevents lenders from being driven to offer it at very cheap rates in order not to keep it unlent. The overflow, from countries more fully supplied, is checked by the high estimate of the risks associated with employment of capital in the scantily supplied localities, and thus under-supply in one country co-exists with over-supply in another, using these terms in the rather loose sense in which they are often employed in ordinary language. In a community where civil order is ineffectively maintained, or the legislation touching the property of, or debts due to, foreigners is unsatisfactory, the risks associated with lending are large, and the supply of capital is likely to be thereby restricted. Its local increase is restrained, as well as the flow from a distance, for savings are discouraged by uncertainties attaching to property rights, a class of uncertainty operating in the same way as the uncertainty necessarily attaching to any event of the future.

In the preceding, no reference has been made to borrowing for other purposes than business operations, inasmuch as the willingness of the private borrower, who desires means for consumption in excess of his current income, to pay high rates for loans, depends on purely personal characteristics in the main. Such borrowing does not much affect the rates at which capital is loaned. The devotion of capital to the ends of spendthrift borrowers diminishes, *pro tanto*, the supply available for industrial uses. It is through such restriction of the available supply that any effects on loan-rates must be sought.

In modern times the great bulk of the borrowing and lending is related to industrial and commercial operations, and the means of paying interest are derived from the profits which are earned by the employment of the borrowed capital in these operations. The cheapness of modern loans, the low rate of interest securable from investments in which the risk is at a minimum, results from a combination of the circumstances to which attention has been directed in the preceding discussion. The total of invested capital is very great, so that opportunities for additional investments at profitable rates are practically dependent on the opening up of new uses for capital, either as the result of changes in the tastes of consumers, or as the outcome of scientific discovery, the exploitation of undeveloped districts, or of newly-found resources elsewhere. The progress of society has removed from many countries a great part of the risks arising from liability to civil tumult or to warlike operations. Improved means of communication, and of spreading information, are reducing the risks of committing capital to distant investments. Thus the difference between gross and net interest has been largely reduced, and the increase of supplies of capital has reduced net interest, so that the low rates current, as compared with those of previous generations, are readily intelligible.

Though, when dealing with the investment of free capital, the supply and demand were considered without reference to the vast mass of invested capital, on the ground of the difficulty of extricating capital from investments already made, it is quite possible to take a broader view, and to include the whole field of investment, and the total amount of capital available, within the scope of our discussion on the subject of return to capital and rate of interest. Indications have already been given that no form of capital is free from liability to wear out and need replacement. In the course of a sufficiently long period, therefore, and in reference to the conditions which tend to be set up ultimately, the difficulty of withdrawing capital from actual investments may be ignored. Given sufficient time, capital may be recovered from the most permanent investment, though some loss may have to be faced. Such loss of value would not be avoided by avoiding the withdrawal of the capital. The value of existing invested capital is a result of its earning power, and is practically independent of what it cost when the investment was made. Such earning power means a power to aid in producing consumable goods or services, which goods or services embody some part, even if only a small part, of the value of the capital in question. That value is, therefore, gradually realisable in a form other than that of the appliances for production, the capital, under consideration. If we can take a standpoint from which all capital is able to be regarded as potentially available for any employment, we need not limit our discussion of the rate of interest to a problem in which free capital alone is concerned, or rather we treat all capital as free capital. The result is not different to what we may arrive at by a path already indicated clearly enough. Where capital is earning a rate on its cost above the rate on current loans, due allowance for risk having been made, the competition of new capital operates, unless monopoly privileges exclude competition, to increase the supply, and hence reduce the value, of the products of that capital. Thus its earning power is reduced in the direction of equality with rates on current investments. Where capital is earning a less rate on its cost than the current investment rate, risk being duly allowed for as before, opportunity is afforded for improvement in earnings so far as absence of keen competition from new investments of capital in the same line is concerned. If lack of such competition do not improve the situation, the ultimate abandonment of that form of investment is only a question of time, and the abandonment may be hastened by the competition of new forms of capital competing to supply the same product. The value of the old investment is destroyed in such a case, more or less completely. Thus there is a tendency for actual earnings to gravitate towards the level expressed by the interest rate. Earnings must, in this case, be understood as the earnings on the marginal supply of capital of any particular form, and, as competition tends to direct new supplies of capital to occupations where the marginal return is above the interest rate, it tends to make the marginal return in every line gravitate towards that rate, and to make that rate express the earning power, not merely of marginal supplies of particular instrumental goods, but of marginal supplies of capital in general.

Some reference may be made to the contention which is advanced that saving is in danger of becoming excessive. If there is justice in the contentions of our general discussion, it must be admitted that an automatic adjustment takes place between saving and the opportunities for employing capital profitably. Investors may be unwilling to accept a reduction of the earnings of their capital. In choosing the alternative of a more risky investment at a hoped-for higher return, in place of a less risky investment at a lower anticipated return, they do not avoid the reduction of net return. They merely decide to disregard the conservative valuation of the risks, and to set a lower value on them, and thus leave a higher value for their estimate of the net out of a given gross return. Experience will inevitably show what has occurred if the increase of capital have really reduced the net marginal return. There are abundant opportunities for the employment of capital in rendering useful services to mankind which promise so low a return that they are beyond the range of present possibilities. Saving will not have exceeded its possibilities of usefulness till capital is available for all purposes of industrial expansion from which may be anticipated a net yield more than sufficient to compensate for the risks of the investment, so long, that is to say, as the rate of net interest is in excess of zero. The attractiveness of expenditure on present satisfactions is likely to grow as increased application of capital affords cheaper means of present satisfaction, while decrease of interest will diminish the inducement to accumulate for future needs. Thus a check to saving is likely to be felt, as interest rates fall, though that is not the same thing as stating that the rate of addition to capital will decrease. The net productiveness of industry may be so great that the saveable fund increases fast, and a smaller proportion of it, reserved for future needs, may mean a steadily increasing total so reserved. Yet the extent of the field of profitable investment of capital borrowed at low rates may be very great, and, in spite of rapid additions to the mass of capital, the fall in its earning power may be slow, especially having regard to the opportunities afforded by extension of scientific knowledge in new fields. The indications of the beginning of the twentieth century point to a pause in the diminution of the marginal earning power of capital, if not to a rise. How long this check, or reversal, of previous tendencies may endure, we make no attempt to guess.

## CHAPTER VII

# THE PROBLEM OF RENT

### THE SHARE OF LAND IN DISTRIBUTION

IN the preceding chapter, capital was considered in a double light. The problem of current demand and supply was examined mainly in relation to free capital, and the results reached were largely dependent on being able to regard the supply as consisting of interchangeable and equivalent units. The earnings of the least productive units, the units which, at current borrowing rates, are on the margin between net profit and net loss to the borrower, were found to register the marginal utility of capital. To pay more for these would be unprofitable, while, if they were yielding substantial net returns, further borrowing would be profitable—they would not be on the margin. The characteristic of interchangeability ensures the rate paid for these being the rate paid for all other units, if we may assume the borrowing and lending to take place in a well-organised market under active competition.

But capital was also regarded from another standpoint. It was seen that invested capital cannot be treated on the interchangeable equivalent units basis. Occupying the field, it is partly protected from the competition of other units of capital, which may enable it to secure payment for its services at a rate higher than that securable by free capital, while it cannot be readily placed in competition with capital more advantageously placed, and may, as a result, be compelled to accept a lower rate of payment for its services than that paid for free capital.

In the present chapter we are to deal with a factor in production the position of which corresponds with that of invested capital, but which illustrates the conditions just described in a more extreme fashion than capital. The supply of capital can, in time, be adjusted to the need for it, as a result of the relation of return to cost. A high return on cost leads to greater supply of the form of capital concerned, a low return on cost leads to a decrease of supply. We have now to give attention to the case where no response of supply to the rate of return is possible. This condition may conveniently be assumed as a means of examining some of the features of the capital problem, but it has to be put aside to enable the examination to be completed. In the case of land, it cannot be put aside, it is a fundamental feature of the problem to be discussed. Some of the language used in regard to land, and some of the results attained, may be usefully applied to certain aspects of problems relating to other factors in production. There must remain a fundamental difference, preventing any complete analogy between such problems and corresponding problems dealing with land, and arising out of the difference between a supply which is, and one which is not, in the long run, responsive to price.

In its relation to production, land is seen to present very varying facilities to the cultivator. Different portions of land will yield very different returns to equal labour and capital expended on them. Differences in fertility, and in situation relative to the market for the produce of the soil, enable different plots to be graded in accordance with their relative superiority or inferiority.

But a second feature is of an importance equal to, or greater than, the fertility, or convenience of situation, of any plot of land, and that is the response to additional cultivating effort which can be secured from it. Increase of labour and capital devoted to the cultivation of a given piece of land will, at any rate after a certain degree of thoroughness of cultivation is exceeded, result in increased product, indeed, but that increase will be in constantly decreasing proportion to the labour and capital to which it is due. The increase of outlay in cultivation, then, produces a diminishing rate of return after a certain point is passed, if not throughout.

That this condition of diminishing returns is a reality may be demonstrated, either by specific experiment, or, more generally, by the following consideration. If returns to labour and capital employed on a fixed land-area were either in constant or increasing proportion to the labour and capital, it is clear that the economical method of raising agricultural produce would be by applying very large amounts of labour and capital on the most fertile land available and letting the less fertile land remain uncultivated. The fact that experience leads practical farmers to limit the intensiveness of their cultivation, and to utilise their further resources in extending the area under cultivation, may be taken to imply that neither constant nor increasing returns are found in practice. By this is not meant that changes in methods of cultivation, consequent on changes in demand, or on extension of knowledge of the science and art of agriculture, may not provide opportunity for using some additional labour and capital, on land already cultivated, in such a way as to give a return greater in proportion to the cost than was previously secured. It may also occur that a choice has to be made between alternative methods of cultivation, the one involving a smaller outlay of labour and capital than the other. The larger outlay may be known to be likely to yield a return more than proportionately greater than that securable on the smaller outlay, but the choice may, nevertheless, fall on the smaller outlay, the less intensive method of cultivation. Were capital abundantly available, and a market for the produce able to be secured readily, the more intensive method might be adopted. Thus, even without change in agricultural knowledge, changes in other conditions affecting the farmer may enable him to reap proportionately greater returns by employing a greater amount of capital and labour on his land. The assertion that, in general, land yields diminishing returns to increased effort laid out on it, is quite consistent with such facts.

When a farmer is considering what he can afford to offer for the hire of land, he must necessarily consider the relation

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of the return he may expect to the cost of securing it. Comparing different plans of cultivation which the nature of the soil permits, he selects that which promises the largest net return, the maximum surplus of value of products over expenses of cultivation. It is this surplus out of which the payment for the hire of the land must come, and, if he have not included in the expenses of cultivation an adequate remuneration for his own labour the surplus must provide for this also. In making his offer for the hire of the land, the farmer will be guided by his estimate of the surplus it can yield above the expenses of cultivation, taking one year with another. He will endeavour to secure as much for himself as he can, but, if we assume that there is competition among would-be tenants, the amount he can secure as the price of his own efforts will depend on what equally skilful competitors are content to accept as the price of theirs. We shall see later that the amount thus chargeable as the price of the managing-farmer's services is capable of determination on definite principles. Let us accept it, here, as a settled amount. Then the surplus above-mentioned, after being charged with the farmer's personal remuneration, leaves a balance which represents the most which can profitably be offered for the use of the land. If competition for tenancies be keen, the owner of the land will be likely to secure the whole of this. If not, that means that the supply of men able and willing to take the risks of hiring land for farming purposes is relatively small, and that they are thus able to secure advantageous terms as the price of their co-operation.

To recur to the possible variations of plans of cultivating the land. It was stated that the plan selected was that likely to give the greatest net return. If the object in view in making the selection be the determination of the highest bid which can profitably be made for the use of the land, it is clear that the selection will be made as stated. It is, however, assumed that the supply of capital and labour needed to give the greatest net return can be secured. If that be not the case, the selection of the scheme of cultivation will be relative to the ability to secure capital and labour to carry it out, and any competitor for the tenancy who has a more ample supply of capital and labour under his control may be able to offer a higher price for the land. Supposing capital and labour to be abundant relative to the land available, consider what is implied in the statement that the greatest net return is taken as basis in determining the amount the farmer can afford to pay for the hire of the land. Suppose the plan of cultivation selected to be modified in the direction either of greater or less expenditure per acre. If the expenditure be less, the net return being less implies that an increase of expenditure would add more to the gross return than would be added to expenses, that is, it would increase the surplus. If the expenditure be greater, the surplus is reduced : this must, clearly, be due to an excess of the added expenses over the addition to the gross return thereby secured. If reduction of outlay and increase of outlay be alike accompanied by reduction of the net surplus of returns over expenses, the marginal outlay must just be remunerated, the marginal expenses must add to the gross returns just sufficient to meet those expenses.

The price paid for the hire of land is known as Rent, and in economics this word is used to indicate the amount of the surplus of returns over expenses, which can profitably be offered (but not exceeded) for the use of land when land is hired from its owner by its user. In what has preceded, there has been considered a surplus out of which farmer and landlord were both to be remunerated. This course has been taken in view of the difficulty of charging for the farmer's labour and skill, with hired labour and capital. In general the land is, and is regarded as, a fixed productive instrument, with which are to be associated appropriate amounts of other instruments, the latter being able to be varied in quantity at pleasure. But with the land is also, in general, associated the farmer, and we have regarded the two as a combination of unvaried amount, with which suitable, variable, amounts of capital and labour may be associated. We have conceived the farmer as hiring the labour he needs and the capital he uses, or charging them against expenses at the rate at which they might be hired ; also as selling the produce, or estimating it at its selling value if it be not sold.

In this way the problem of what expenditures are, and what are not, worth making, can be more clearly conceived of than where produce is not valued at its selling value, or cultivating effort priced at its cost for hiring. Labour hired by the day can be applied in greater or less quantity as prospects of profit may dictate. As to the farmer himself, he is personally committed to the business, and his efforts cannot be reasonably considered as supplied at a tariff rate in the work of the farm. Whether more or less of capital or labour should be used must be determined in relation to its cost and probable returns, and in that cost an extra charge for the farmer's services does not appear as a necessary and invariable item. Some contribution to the farmer's profits may be anticipated, or there would be no inducement to undertake the risks of borrowing capital and hiring labour, but the amount of that contribution does not appear as a charge on the same level as interest on capital or wages of labour hired. If the farmer cannot look for profit in taking a lease at a given price, we may assume he would seek other avenues of employment.

When a contract to hire land at a given annual price has been made, it is clear that an inducement exists to undertake any line of expenditure promising returns in excess of the outlay, and to avoid all in which the excess is in the contrary sense, and this whether the contract-rent correspond with the surplus yielded by the land or not. If the contract-rent be less than the land turns out to be capable of yielding, the farmer shares in the advantages of ownership during the term of his tenancy. If the contract-rent be greater than can be paid from the land's products, the farmer must, if held to his contract, receive an inadequate remuneration for his own services, and may have to trench on capital to provide means for paying his rent. This may reduce his power of cultivating the soil in the manner calculated to get from it the best it can give, and thus add cumulatively to the farmer's distresses.

It is easy to conceive of conditions which may cause contract-rent to differ from the rent-yielding capacity of the soil. Thus, an unwillingness to leave a farm which had been held by parents and grandparents may serve to induce a submission to the exaction of a rent which leaves an inadequate remuneration to the farmer for his labour. Similarly, a landlord may be unwilling to press an old tenant, even though the land has risen in value. Further, capital invested in the soil cannot be withdrawn at short notice. Some improvements may take years to exhaust, and a tenant, who was unable to secure adequate compensation for unexhausted improvements, effected at his cost, might lose less by renewing his lease, at a rent higher than the land, without those improvements, could bear, than by abandoning the value represented by improvements.

Where such hindrances to unfettered competition are absent, the competition of farmers for tenancies, and the desire of landlords not to have land unlet, tend to adjust contract-rents to the level determined by the surplus of the returns over the expenses of cultivation of the soil. The amounts of the rents of different soils tend to be adjusted to the differences in the facilities which they afford for cultivation. Where the nature of the soil demands cultivation by men of greater ability, these are in a position of advantage for securing the tenancy, since those of less ability will fail to secure a yield large enough to enable them to make offers for the land as good as those which the more capable can make without sacrifice of profit. It is necessary to state this, since the tendency in comparing different farms theoretically is to consider them as cultivated with equal skill. In practice, higher skill is required for some classes of farming work, and an adjustment takes place between the skill of the farmer and the opportunities afforded for the exercise of skill on different farms.

The amount of rent has been stated above in terms of returns to and expenses of cultivation. We now proceed to present the same fact from a different point of view. If the needs of a country for agricultural produce (say wheat, for precision) could all be supplied from the most fertile soil it contained, no soil inferior to the best being cultivated, and the yield being, say, 25 bushels an acre, rent would not appear, and the price of produce would correspond to the cost of raising it on this best soil. Imagine the community to increase, so that its needs could no longer be met from the best land, under the old conditions of cultivation. An inferior quality of soil might then come into use, yielding but 22 bushels to the acre. Under these conditions, the value of the produce must be adequate to make its production on the inferior soil profitable, that is, it must rise till 22 bushels suffice to pay the expenses of cultivating an acre. The best soil will now yield 3 bushels per acre beyond expenses, and the cultivator will be no worse off, when paying 3 bushels per acre rent for the best soil, than when paying no rent for the second-rate soil. If the need for produce increase further, so that a third quality of land, yielding but 20 bushels, must be brought into contribution, the value of the produce must rise so that 20 bushels may cover the expenses of cultivating an acre. The best land can now yield a rent of 5 bushels per acre, the second quality one of 2 bushels. With more numerous gradations of quality the general principle remains unaltered, and an approximation is made to real conditions, where different qualities of soils are found grading gradually from best to worst. Advantages of situation are equivalent to additional fertility, as reducing the expenses of marketing, if not also of obtaining the appliances for raising, the produce.

In the above illustration, the need of recourse to inferior soils may be avoided by having recourse to more intensive cultivation of the superior land. Thus, if doubling the labour and capital on the best soil would yield a total of 48 bushels per acre, the yield to the second half of the labour and capital would be 23 bushels, while it could only secure 22 bushels on second-grade land. Under such conditions, and so long as such intensive cultivation yielded a supply adequate to the needs of the community, the price need not rise above what would make 23 bushels sufficient to pay for an amount of capital and labour equal to that originally conceived as expended on each acre. That original cultivating effort yielded 25 bushels, and may now be remunerated with the value of 23 bushels. Thus an excess of 2 bushels appears, in similar fashion to what previously occurred through the recourse to second-grade soils. Without supposing so great a change as a doubling of the outlay on each acre, some increase of the capital and labour may realise returns in the proportion indicated by the figures used in reference to a supposed doubling, and the effects on the proportion of the original 25 bushels needed to pay the expenses of the cultivation of the soil will be unchanged.

Thus, alongside of, and concurrently with, the advance of cultivation to inferior soils, we have a more intense application of capital and labour to soils already cultivated. In each case it is seen that the surplus available for rent is equal to the excess of the actual produce over the amount needed to cover the expenses of cultivation. To state the amount of rent with reference to those expenses, then, is by no means in conflict with the conception obtained by means of illustrations such as those we have now been considering.

How do these ideas apply to the case of land used for building purposes, or to mining properties? First, let us consider building land. Here, situation is practically the one element in determining the differences in value of different sites of equal area. But, as in the case of agricultural land, we may properly give attention both to the differences between different sites and to the differences in the various modes of utilisation of the same site. A site in a business thoroughfare affords opportunity for transacting a larger amount of profit-yielding business than a similar site in a side-street. There is a greater excess of income over expenses in utilising the one than in utilising the other, and that excess is the measure of how much more may profitably be offered for the use of the more convenient site. In planning the building to be erected on a given site, the expenditure will be considered in relation to the revenue-yielding capacity of the accommodation secured. The limit of expenditure will be reached when additional outlay adds, to the prospective yield, not more than enough to cover interest on the outlay and a fair remuneration for the risk undertaken in connection with it. The total yield will bear a greater proportion to the total outlay than the marginal yield thus conceived to the marginal outlay, and the difference provides the fund from which the rent of the site may be paid. The price which is worth offering for the site depends on this prospective difference, and is limited by it. As in the case of agricultural land, it is with reference to the most advantageous utilisation of the area, under the circumstances of the time, that the rent-paying power of the site is determined. If, for any reason, the site be utilised for a less advantageous purpose, those interested must be supposed to see some indirect compensation for the sacrifice involved in devoting to a less productive purpose what was suitable for a more productive one. When once the site has been improved, the building erected may, in course of time, become not fully suited to the needs which have developed. Its actual usefulness will determine the rent-yielding power of site and building together so long as it remains, and a comparison of this with the best use that could be made of the site, if unencumbered, will determine whether it is more profitable to leave the building as it exists, or with minor adaptations to existing needs, or to replace it with a new building, more fully adapted to the new conditions of the locality. It is almost obvious that high rental values of building-sites can only exist where there can profitably be made costly improvements to the site; only where large amounts of capital can be turned to use in connection with the site can it be worth a large rent. The rent arises because of the opportunity for using the capital so as to secure a return in excess of the cost of securing the use and replacement of the capital. The rent is, in fact, the price of that opportunity. As in all cases of rent, if equal opportunities of profit could be found without using the rented object, there would be no stimulus to the payment of rent for its use. Because land affords opportunities, and in the degree in which it affords opportunities, for using capital and labour with greater profit than elsewhere, it becomes worth while to pay for the privilege of access to those opportunities, and to pay any price which leaves some residue of advantage to the purchaser of the said opportunities.

In passing, special attention may be directed to a difference already noted between agricultural and building land. With building land, the plan on which capital is expended in improvements is determined, as with agricultural land, by the prospective advantages to be secured by such an expenditure of capital. But the nature of the case makes a large part of the capital outlay on building land such as gives its returns somewhat slowly, and changed conditions, making a different kind of improvement more advantageous, cannot, in general, meet with so prompt a response as is possible as the result of like changes in reference to agricultural land. Much of the capital represented by improvements of agricultural land gives a return sufficient to replace it within a short period of years, and thus opportunity is afforded to adapt the forms of capital fairly quickly to the changing knowledge and needs of agriculture. For the most part, similar changes in buildings in cities require a longer term of years before they can be effected. The rent idea applied to an improved urban site must generally be applied to the land and to a good deal of capital effectively bound up with the land. In the case of agricultural land, though the same is to some extent true, the dissociation of land and capital can be more easily conceived of, and occurs more rapidly, as a rule, in practice.

For what is land-rent a payment? The Ricardian phraseology is that it is the payment " for the use of the original and indestructible powers of the soil." As Professor Marshall has pointed out, the powers of the soil which are original and indestructible are situation and area, implying access to sunlight, rain, etc. Other properties of the soil can be created and destroyed, but these are important as determining whether it is worth while to attempt the modification of those other properties. As already indicated, land as hired combines certain mechanical and chemical conditions of the soil, which can be created or destroyed, and the use of buildings, roads, etc., facilitating the working of the land, with the use of the original and indestructible powers referred to. Inasmuch as contracts for the hire of land aim at securing that its existing powers shall be maintained, whether original or acquired, destructible or not, there is no great gain in debating closely what is the line of division between the two classes of properties fitting land for use.

In some agricultural leases provision is made for modification of the condition of the land, and compensation duly bargained for. In the case of building land it is still more usual to provide for the making of certain improvements, which are to pass to the owner of the land at the termination of the lease. In such cases, too, it is only reasonable to suppose that the amount of rent contracted for is affected by the presence of these features in the contract. When, however, we consider the case of mines, we have such compensation, for a change in the condition of the property leased, not as an accidental, but as a necessary, feature of the contract. A mine cannot be used without a decrease in the store of mineral which it contains. Payment for the use of mines, therefore, includes a compensation for the decrease of the value of the mine necessarily resulting from its working. The royalties which are commonly paid to mine-owners are, then, partly a payment for material removed, and only partly a rent proper. But they are, in part, a true rent, for the varying facilities for the extraction of mineral in different mines correspond to the differing fertilities of different farms. As with farms, so too with mines, more or less intensive working is possible, and may enter into the rent problem in each case. Where mineral is easily and cheaply won, and enters into market competition with other mineral which is difficult and expensive to extract, the former can bear a higher royalty than the latter, and the differences in royalties are directly comparable with differences in rents of building sites or of agricultural land. But, so long as all the mineral is charged with royalty, the cases are not completely parallel. The condition which limits the profitable extraction of mineral is that its value shall cover, not merely the cost of winning, but the royalty in addition. Thus the marginal output has to bear a charge not falling on the marginal produce of agricultural land. In each case the expenses of production include the replacement of material and instruments used up, and replaced, or at any rate replaceable, but the mineral bears, in addition, a charge for natural resources used up and not replaceable.

The price of produce, every unit of which bears a charge additional to the expenses of winning it, must be higher than where that charge is not imposed. So much of mining rents or royalties as constitutes such additional charge is a cause of an elevation of price in the produce. If it were not charged, the amount of produce raised and placed on the market would be increased, for some mineral, which can return the expenses of winning it, but cannot bear charges beyond these expenses, would be added to the supply as a result of abolishing the charges, or deducted from the supply if charges of this nature were imposed where none had previously existed. In the case of agricultural land, leased in the ordinary fashion, the remitting of rents by landlords would not affect the intensity of cultivation of the soil, and therefore the supply of produce. It might do so if the tenant had been inadequately provided with capital, for the extra funds thus placed in his hands would render it possible for him to improve his mode of cultivation. But, as previously pointed out, the conceptions relating to rent have been worked out on the hypothesis that the farmer owns, or can borrow, capital adequate for making the most profitable use of his holding. Relief from the demand for rent would, in that case, simply give him the advantages of ownership, and it has already been noted that the intensity of cultivation would not be changed thereby. Some modifications would arise in practice from the greater willingness to risk outlay on owned land than on hired land, to work for more distant returns on the former than on the latter. But, broadly speaking, the statement that the supply of produce is not affected by the question of whether land-rent is paid by cultivators to others, or retained by themselves, may be safely made. A change of the claimants of land-rent would, further, not affect the demand for produce. Here, too, there are indirect effects, not entirely negligible, and running counter to the allegation made. A transfer of wealth from one class to another does affect the nature of the general consumption of goods, and hence modifies the demand for various groups of commodities, including agricultural produce. Apart from this effect, demand for produce would not be changed by a cessation of rent payments. Now, if neither supply nor demand be changed, the value of the produce must be unaffected by the system which places rents in the ownership of a class differing from the class of cultivators of the soil.

The preceding argument is a not altogether satisfactory presentation of the case in favour of the proposition that "rent does not enter into cost of production," that is, into that cost of production which determines, or at any rate registers, value.

Recurring to the theme of an earlier part of this chapter, it may be recalled that, with a growing demand for produce, land of lower degrees of fertility needed to be cultivated. It was the need for more produce which made it necessary to submit to the greater expense of raising it from inferior soils, not the need of paying rent for superior soils. The power of securing a rent for the better soils was a consequence of the need of resorting to the inferior, not the cause of such action. The same is true if we deal with intensive cultivation instead of extensive. The need for raising more produce from the same soil, in addition to what has previously been secured, leads to a submission to a less produce for the same expense, or a greater expense for an equal amount of produce, added to the old. Rentability is a result of such resort to less profitable modes of cultivation, and it is not the demand for rent which compels resort to the less fruitful expenditures. Such resort could not be avoided if every cultivator owned the soil he cultivated, provided the demand for produce rendered it necessary to resort to inferior soils, or to intensive culture of the superior. It is this that is meant by saying that rent does not enter into cost of production.

In reference to some recent attempts to extend the statement to interest and wages, on the ground of analogies between rent and return to capital already noticed, and similar analogies to be noticed in the next chapter, it may suffice to repeat a statement already made. In the case of capital goods, the actual return may be of the nature of rent, a quasi-rent, to use Professor Marshall's term, but, in a broad view of the organisation of production, the question of whether such return, when considered as a proportion of the cost of the capital goods, rises above or falls below the interest rate, will affect the supply of those goods, and hence the abundance, and the value, of the commodities they serve to produce. The maintenance of the return at a sufficient proportion of the cost of the capital goods is, then, a condition of the maintenance of the supply of commodities, and thus truly a determining element in their supply. Such a condition does not hold for land rents, for the available supply of land is not responsive to changes in the rent-paying power of land. Land, so far as the properties of situation and extension are concerned, and not including in that term capital bound up in improvements of the soil and capable of exhaustion, is available for use in the same degree whether it is able to secure for its owners a high or a low return. The payment of any particular rent for land, is not, therefore, a condition of the maintenance of the supply of the commodities raised from it, and thus rent does not enter into the price of agricultural produce. It is not possible to apply the same conceptions to prove that it is equally true that interest does not enter into price, or that wages do not enter into price.

Let us examine the application of this doctrine to urban land. We find proprietors of shops occasionally advertising that they can sell cheaply because they are not burdened with heavy rents. But it is hardly to be supposed that dealers would willingly pay heavy rents, for sites in principal thoroughfares, if they could save by setting up their businesses on less heavily rented land, in distant suburbs or in less frequented streets. The opportunities, offered by the site in a main thoroughfare, for doing a large business, and thus securing a large profit, enable a high rent to be paid for that site without abandoning all the advantages presented by its occupation, as against a similar area fronting on a back street. Experience shows that, generally speaking, the large shop on a leading street attracts custom by prices as low as those of less pretentious establishments in minor thoroughfares. It is not that high rents compel high prices, but that the chances of doing a large business at ordinary prices make it worth while paying a high rent for the site. Some apparent exceptions may be found in limited areas in some cities where there may be found shops which are specially frequented by wealthy shoppers. If there be, and there sometimes are, considerable numbers of shoppers who will not be driven elsewhere by high prices, such shops may be able to raise their prices above the general level. The habits of the fashionable shopping world may thus lead to high prices in the highly-rented shops, but the high level of prices cannot be said to be caused by the high level of rents. Rather is the opposite the case. Custom enables a large business to be done on these sites at peculiarly remunerative prices, and thus gives them a special value. This is reflected in the rents, which are able to be offered because of the profitable character of the business opportunities afforded, and which are, of course, demanded by owners conscious that the demand for such rents will not risk failure to secure tenants.

Some attention has been given to the influence of increasing population, as shown in increasing demand for the produce of the soil (and for room to live) in raising rents. Recent history has made prominent an equally important influence tending to lower rents, to which attention should also be directed. So far as some parts of urban areas are concerned, the improved facilities of transit, which are now being provided, have relieved the pressure on space for residential purposes, and thus tended to lower rents for such purposes. The same cause has increased the value of central sites for business purposes, by rendering them more easily accessible from greater distances, and by larger numbers of people. But it is in regard to agricultural land that improved facilities for communication, and cheapened transport, have produced the most profound effect on values and rents. Readiness of access to market is less dependent on mere nearness than formerly. Extensive areas of fertile land, which can be cultivated at small cost, are now able to contribute to the supply of markets formerly dependent mainly on local supplies. Agricultural produce has been cheapened by this supply from districts where the cost of production is small, and from which the cost of transportation has been reduced to a very low figure. The lower value of produce has lowered rents as measured in produce, since it has made it unprofitable to cultivate lands of low fertility, or press intensive cultivation to a stage of low returns, and thus the amount of rent, measured in produce, has been reduced concurrently with the fall in value of the produce, and as a result of that fall. Just as the increasing demand for produce involves resorting to poorer soils and more intensive cultivation, and thus leads to higher rents, the reduced demand on the old lands has had an opposite effect in England, and in countries similarly placed. Changes in methods of cultivation have been rendered possible by advance in agricultural knowledge, but have failed to offset generally the influences here under consideration. Thus, agricultural rents in England have fallen during the last thirty years, while the supply of agricultural produce available for consumption by the English people has greatly increased. The growing populations of many large cities have rendered more intensive cultivation of land in their neighbourhood, for the raising of market-garden produce, much more profitable than formerly, but the areas which can be affected by these possibilities are, by the nature of the case, somewhat limited.

In reference to the new lands, the products from which have competed so keenly with home-grown produce in England, it is necessary to make a few observations. The doctrine of rent, which has been discussed in this chapter, is a doctrine framed to explain conditions which contrast widely with those presented by these newly opened districts. In them we find abundance of land, available at so low a price as to be fairly classed as "no-rent" land, that is, the annual interest on the purchase price is so small a sum per acre as to be practically negligible in comparison with rents which are common, and regarded as moderate, in England. Much of this land, too, is cultivated by methods, and with appliances, which fail to develop the utmost possibilities of the soil. Frequently the increase of outlay on them would reveal a state of increasing returns. Thus the hypotheses on which consideration of marginally profitable outlay, and marginal cost of production as determining the rental value of land, was based are simply not applicable to the present conditions of cultivation in such cases, for example, as parts of Western Canada. Where, as in those districts, fertile land is abundantly available at a small price, there can obviously be a response of supply to demand. If it be worth while, the supply of cultivable land can be increased with a degree of readiness comparable with that manifested by capital in countries like England. New land is brought under cultivation partly for the sake of securing rights of property in it, and any future increase of value which may accrue. With due regard to the modifying influence of this consideration, we may say that the cost of adapting new land to the bearing of crops is a part of the necessary expenses of production of those crops, and, as such, influences the price of the produce.

Rent of land is only, in a strict sense, of importance where land is hired by the cultivator from the owner. In so far as the influences which determine its amount are different in nature from those determining the amount of the other distributive shares, interest, wages, profits, its separate consideration is warranted, even where no payment corresponding to it passes from one person to another. As a determining influence in the value of land, it is further of importance, whether the distinction of cultivator and owner occur in practice or not. The net annual surplus from cultivation, over and above the personal remuneration of a cultivating owner, is the measure of the advantage of ownership. The value of the land is the capitalised value of the surplus. It will, therefore, depend on the rate of interest, which expresses the proportion between an amount of capital and the perpetual income which it can purchase. Probabilities of change in the net surplus of the land, or in the rate of interest, including such probabilities as may have to do with future changes altering entirely the kind of serviceability of the land, making agricultural land into building land, for example, will have their influence in modifying the proportion between the present net surplus from the cultivation or use of land and its capital value, and making that proportion either greater or less than the current rate of interest expresses. Consideration must also be given to the social standing secured through the ownership of land. But, though these other features enter as important modifying influences, the amount of the actual and prospective rent-paying power of the land is the fundamental basis on which its value depends. Thus the problem of rent, though directly a problem concerned with the use of land for a more or less brief period, is in reality closely connected with the problem of land values, a problem which is of interest and importance whether land be or be not rented.

Some new features are introduced into our problem when we deal with contracts for the hire of land in exchange for a proportionate share of the produce instead of in consideration of the payment of an agreed-on sum of money. This plan of farming on shares, or metayer tenancy,—to use phraseology employed in America and in France (and some other European countries) for a tenure fundamentally similar, though the former is devised in relation to modern conditions, the latter is a survival from past ages,—introduces new influences to determine the degree of intensity of cultivation which will be most profitable to the tenant. If he is to receive but the half (to take a common proportion) of any additional produce, that half of the produce must suffice to repay him for his contribution towards its production. He would not, therefore, cultivate to the same degree of intensity as a cultivating owner, unless the proprietor bore, in one way or other, an equal share with himself in the expenses of raising the additional produce. We shall not pursue this subject further here, but it affords a useful and instructive example of the way in which the supply of produce of the soil may be influenced by the kind of interest possessed, by the responsible cultivator of the soil, in the results of his toil. The relative advantages of large and small farming, of peasant proprietorships and the like, afford further exercises in applying general principles to special conditions. Large farms offer opportunities for better organisation than small farms, and may ensure the control of the land being held by men of wider experience, superior training and knowledge, and more cultivated intelligence, men able to command more ready supplies of capital for the carrying out of necessary improvements and the securing of the most effective machinery. Greater power to survive the strain of prolonged misfortune without suffering a crippling of resources, and some advantage in conveying to market and selling products on a larger scale, tell also in favour of the larger farm. But the small farm has the advantage of the direct superintendence of the farmer, the man whose interests are at stake, in detail which on a large farm must be left to subordinates. What labour is hired may be stimulated to greater effort. Co-operation may, and to some extent already does, remove some of the difficulties of lack of capital, of knowledge, of access to the most suitable appliances. These are some of the points to consider in weighing the relative merits of the large farm and the small one.

The sense of ownership has been cited on innumerable occasions as a stimulus to effort aimed at improving the property owned, and it need not be dwelt upon here. The working owner of a small property may produce a gross return beyond that secured by tenants of similar property. It does not follow that net returns will compare favourably for the peasant proprietor. He labours, frequently, for returns which would fail to provide the means of hiring labour such as his. When comparisons are made between the productiveness of land cultivated, in small holdings, by owners and by tenants respectively, the difference between gross and net returns is worth remembering. In addition, a man of small resources may do better for himself if he do not use so much of his resources in the purchase of land as to leave him inadequate means to cultivate it to the best advantage.

When a family secures its livelihood by working for hire, the possession of a small plot of land may serve to render useful much spare time and to add substantially to the resources of the family. The measuring of cost of production against the value of the product is less precisely done, and is not much affected by the changes in the market valuation of the product, when that product does not find its way to the market, but is consumed by the producers. This consideration affects all classes of producers of goods or services which are not exchanged before being consumed, and not agriculturists only, or chiefly.

The political effects of a wide distribution of ownership of property need no special consideration here. It is sufficient to remark that, in considering a policy for practical adoption, some political advantage or disadvantage may have to be weighed against counterbalancing economic disadvantage or advantage respectively.

## CHAPTER VIII

# THE PROBLEM OF WAGES

### THE LABOURER'S SHARE IN DISTRIBUTION

WE have now to consider the application of the principles developed in the general discussion of value to the special case of labour, that is to say, to study the problem of wages. In doing so, we have, as in the preceding chapters, to give our attention to the demand and supply sides of the problem in turn. We take up first the demand side. What can an employer afford to pay for labour? The obvious and direct answer is, as much as the labour is worth and no more. This, however, requires closer examination.

Labour is generally associated with capital and land in production, and we need to form a conception of the value of the contribution, to the joint product, which labour makes. Then, too, different kinds of labour, paid at many different rates, are employed together, and the contributions of the various grades to the total result must be disentangled from one another if we would know what each grade is worth. The case belongs to the complex cases of value to which some attention was given in Chapter V. As shown in that chapter, however, the contribution of labour, or of a special grade of labour, can be, for practical purposes, separated from the joint product.

Consider the case of a group of labourers performing similar tasks. If their numbers can be increased or decreased slightly, without a change in the rest of the apparatus of production, with which they are associated, the consequent change in the product can be directly attributed to the change in their numbers. The loss in product due to a loss of a workman, or the gain due to the addition of a workman, represents that workman's effective product. But this can only be maintained if the change of numbers does not involve leaving some machinery, or other productive appliances, wholly or partially idle, that is, if the removal of a workman simply removes his own contribution to the product, and not, in addition, that of a machine, or some part of that of other workmen. In conceiving of a man's net product, we must, therefore, either conceive of a case where no readjustment, of appliances to numbers using them, is needed when one additional man is added to, or subtracted from, a working group, or else we must make comparison between two cases, the one where the available capital is given the forms needed for setting a larger number of men at work, the other where the same amount of capital is represented by appliances for a smaller number. When the larger and smaller numbers differ by unity, the difference in the product of the two groups is due, not to a difference in any other element, but purely to the difference of a workman more or less, and we may, therefore, reasonably call the difference the net product of that man's labour. If we may assume a knowledge of the interest on capital, the conception may be made simpler. We have merely to observe the difference in product due to the removal of one workman, to determine further the capital rendered idle by his removal, and, after assigning, from the total decrease of product, so much to capital as will account for the interest and depreciation on the capital thrown idle, attribute the remainder to the workman.

In the preceding statement, the reference has been to capital and labour alone. If there be other productive agents to be taken into account, such as land or managing services, the problem is made more complex, but is not essentially altered in nature, or in method of treatment.

Having formed a conception of what we may regard as a man's contribution to production, his net product, we may proceed to consider how it is related to his worth to his employer, if he be hired. First let us suppose that his place can be taken by any one of his fellow-workmen. Then it will be clear that the question of the amount of his net product is one which is not concerned with himself personally, but that any one of those who could replace him, or whom he could replace, must be regarded as having the same net product. If the addition of one to the group add a certain amount to its total product, and it is indifferent which of the group, thus enlarged, does the work of the added man, then each in turn may be regarded as the last added, and none can be assigned an importance superior to any other.

Now let us give attention to the comparison of such net products, of the members of a working group, as additions are made to its numbers. We may find that the added members continually add the same net product, or that the addition falls off as the numbers grow, or the opposite. If the additions are unchanged as the numbers increase, that is, if we find something corresponding to constant returns, this net product will be the measure of the value to the employer of the assistance of each and every one of the workmen. Should they be able to be hired for less, the employer profits, while if they cannot be had for that amount his immediate interests lie in the direction of not seeking to hire them at all.

But a more general case will be found to be that in which the increase of numbers, employed in a particular way, leads to a decrease in the net addition made by each added to the number. The net product of the marginal man decreases as the number to be set at work increases. As already indicated, the assumption that each may be substituted, without loss or inconvenience, for any other, leads to the conclusion that the net product of the marginal worker measures the value to the employer of each of those with whom he is interchangeable. A further point of importance is, that the larger the number for whom employment is to be found, the smaller the marginal net product, and therefore the less the price it is worth while offering for additional men. So long as the current rate of wages is less than the marginal man's product, so long is there profit in securing additions to the number employed. When that marginal product, in its process of progressive diminution, falls below the level of the current wage-rate, there is lacking any inducement, of profit to the employer, to add to the number he employs. Thus, the demand for more men is active or not according as the current rate of wages is below the value of the net product of the marginal worker or not, and, in seeking his own interest, the employer acts in a way tending to make marginal net product correspond in amount with current wages. In a state of equilibrium, where no inducement for further change was left, this correspondence would be complete. It is, further, clear that, in seeking to secure more men, employers tend to raise wages, so that, apart from the decreasing marginal productivity of labour, the rise of wages in response to an active demand for labour acts to bring about the correspondence in question between the wages-level and marginal productivity.

The third possibility is that the increase of members in an industrial group adds to its product in a greater proportion than that in which its numbers are increased. If the net product of the marginal worker steadily increase, it must be in excess of the average product of the group. But this average must be increasing also. To secure additional men, it would be worth while offering them the equivalent of more than the average product assignable to the labour of the group, were it not for their interchangeability. This feature makes it necessary to restrict offers for additional men to the average product of the group at least. All that can be said in this case is that, while such conditions continue to prevail, the extension of employment of this kind offers advantages so long as wages do not rise to a point where they absorb the whole benefit of the increase of productiveness of labour. This situation is one calculated to lead to continued demand for labour, the response to which, in demand for increased wages, has already been pointed out. There is no assignable limit to the rise of wages, though there is an obvious limit to the rate at which the rise may occur. It is not going too far to say that this state of things can be, as a rule, only temporary. In the expansion of the enterprise in question a point will be reached after which the marginal net produce of labour begins to decrease in value if not in amount, and when expansion has passed this point the preceding considerations apply. The renewal of the increase may take place as the result of changes in organisation, the application of newly discovered methods of using scientific knowledge and the extension of such knowledge, the discovery of natural resources hitherto unknown, and the like. Thus the decrease of marginal productivity of labour is not a feature precluding hope for the future. It may simply connote a pause in the conflict between man and nature, a pause limited in duration and in the extent of the industrial field affected. Such pauses, however, are an important feature in the situation, since their limits are not easily foreseen. The insistence on increase of remuneration on the part of hired workmen cannot, in itself, provide the means of meeting the demand, though it sometimes serves as a stimulus, urging to the invention of some method of reversing the tendency to decrease of marginal productivity of labour in industrial employments.

Except in those branches of industry in which, for the time, increased numbers can be employed to increasing advantage, we may say that the net product of the marginal labourer tends to decrease, and that the limit of the price which employers can afford to offer for labour is marked by this marginal productivity. This has been developed in reference to labourers who are interchangeable between themselves, but it can readily be extended to the more general case of units not mutually equivalent. The employer is concerned rather with the work done, or to be done, than with the persons who are to do it. This statement must not be distorted into meaning that it is indifferent to an employer whether his work is done by many or by few hands. Clearly that is not the case. Neither is it to be inferred that quality of work is unimportant. What is intended is that the application of the principles here discussed does not depend on the comparison of individuals doing exactly equal amounts of work. We are dealing with labour in quantities sufficiently large for the use of a marginal unit of labour which shall be represented by more than a single individual. In such a unit, there is nothing to hinder regarding, say, two efficient men as the equivalent of three less able ones, if their net product is equal to that of the three. The equivalence of units that is of real importance, in reference to the points discussed, is an equivalence of producing power rather than of individuals. If wages correspond to work done, all that has been said may be applied with this modification. If wages are equal per man, then a modification must be introduced, since the more productive individuals will represent a greater net product to the employer than those less capable, and thus marginal productivity per man may fall off more rapidly than if the men were really of equal working power, since the more able will be preferred, and therefore, additions to numbers will generally be of less able units, and reduction of staff will take place by weeding out the less efficient. Thus, in the long run, even if wages per man are paid at a uniform rate, while the men are of unequal ability, opportunity to earn those wages will be more continuously afforded to the more able than to the less able, even if a difference of actual payment is not effected, *e.g.* by a change in the designation of the task of the more capable, accompanied by a change in payment. In spite, then, of actual differences between human capacities, the correspondence of the marginal net productivity of labour with the demand-price may be maintained. The units of human productive energy are interchangeable over a much wider field than persons are capable of substitution one for another, and individual workmen may be regarded as representing a greater or smaller number of such units of productive energy.

When we have to deal with exceptional kinds of work, for which the available men capable of performing the work are few, the device, for determining the individual contribution to the total product, to which recourse has been had above, is no longer necessary. The work of the individual being able to be more directly associated with its result, we are not met with any great difficulty in answering the question: What is the net product of a man's work? It was for the purpose of providing an answer to this question that it was necessary to give attention to marginal productivity when dealing with masses of men who, as individuals, could not be dealt with, since they formed indistinguishable parts of a mass of work-people, that is to say, parts indistinguishable for the purpose of assigning a distinct part, or a distinct share of the value, of the product to the work of the individuals in question, by any other method than the division of the value of the product by the number of those engaged in producing it. The value so divided would need to be disentangled from the productive contributions of other classes of workers, of capital, etc., and the preceding discussion is designed to afford a means for handling some of the obvious difficulties which this problem presents.

We pass now to the consideration of the features which call for attention in reference to the supply-price of labour. This term is used to denote that price which will suffice to evoke a volume of supply adequate to the need at that price. Generally speaking, with a change in the supply needed, there will be a change in the corresponding supply-price. It may also be noted that this price is generally only one of the features which serve to influence the volume of labour available. Hours of labour and conditions of employment, for example, may be such as to either add to or detract from the attraction of a given price offered.

As affecting the supply of labour, we need to distinguish clearly between the two kinds of problems we may have to consider. The supply-price may have reference to a supply, attracted to a given place and industry from other places, and from such other industries as can supply labour suitable for the ends in view. It may, on the other hand, be used in reference to the training of boys to a particular trade rather than to any of the other trades among which they are practically able to choose; or even to the stimulation of a general increase in population by increase of births, resulting from the encouragement of marriages among young people due to generous remuneration of labour, whether the labour be self-employed, or hired out to a master. In the first of the problems, the attraction of high wages in a particular industry or locality needs to be sufficient to outweigh the similar attraction of other industries, and also, perhaps, the common disinclination to change trade or place of residence, a disinclination which, though common, is not universal. Further, the number of hours in the day, days in the week, or weeks in the year, which are devoted to work is affected by the rate of remuneration secured. When these various features are taken into account, the range of elasticity of supply of labour can be estimated. The whole supply procurable may be such that its marginal productivity is considerably greater than the equivalence of the price which is adequate to divert it from other employments and induce sufficient continuity and vigour of work. In this case the marginal demand-price may exceed the corresponding supply-price. Should rival employers be bidding keenly against each other for the control of such a supply of labour, the tendency would be for wages to be placed at a figure well above the lowest which would suffice to secure the requisite supply, but for such competition among buyers. Again, if the sellers of the labour be conscious of the advantage they enjoy by such relative scarcity, and if they are good bargainers, or have enough of such among them to set a standard for the rest, or be associated for the purpose and led by a good bargainer, they may secure for their labour a price well above what would suffice to prevent them from withdrawing part of the supply, though, of course, not exceeding the marginal demand-price determined by the productivity. If the employer were actuated by motives which made it important to secure labour, even at a price which involved pecuniary loss, the wage might, for a time, go beyond even the equivalent of the marginal productivity.

Thus, when the supply of labour is relatively small, and for as long as that condition can be maintained, the labourers may secure a price for their labour in excess of what would adequately remunerate them, that is, in excess of the lowest price which would suffice to induce the supply. Such an excess corresponds with what was found to occur in the case of returns to capital, and which has been called a quasi-rent.

It serves to attract additional supplies of labour to the place or industry in which it is realised, and may thus gradually remove the cause of the excess, namely, the relative scarcity of labour. Should artificial barriers restrict such recruiting of labour supplies under the attraction of favourable conditions of employment, the excess may endure for a long time. The invention or extension of other means of production, so as to avoid dependence on the scarce labour, or the substitution of a cheaper (or different) product for that dependent on such labour, may lead to a fall in the demand-price for it, even if the supply is effectually restricted.

In a manner corresponding to that which affords peculiarly advantageous conditions to labour which is scarce, conditions exceptionally unfavourable may affect bodies of labourers who are unable, or unwilling, to transfer themselves to other localities or trades when their own occupation ceases to be profitable. A price for their labour which would not have sufficed to bring them into the trade or locality may yet fail to reduce the supply to an amount which can be profitably employed at such adequate wages. The over-supply will lead to one of two results. Part of the labourers may be without employment, and thus constrained by exceptional pressure to remove themselves from the over-crowded trade or locality. Or, the whole may find employment at wages reduced to the level of the marginal productivity of the excessive supply. In the event of the lack of profitable employment being expected to be but temporary, reduced wages, or temporary lack of work, may do nothing to reduce the labour supply. Employers may even retain workmen at wages higher than their temporary productiveness would warrant, in order to hold together the working force in anticipation of revived activity in business. Otherwise, time may be expected to gradually reduce the over-supply, since the irregular employment, or low wages, or both, prove an insufficient attraction to draw young men into the trade in numbers sufficient to replace the natural loss by death or disability. The deficiency in the wages, during the period of over-supply, below the level which would serve to maintain a due flow of fresh labour into the trade, to replace its gradual depletion by natural causes, may be treated, also, as a quasi-rent, but a negative rent in this case.

In both cases, under-supply and over-supply, the problem presented may refer to even more temporary conditions than those here contemplated. It may be that circumstances preclude the recruiting of labour from other localities or trades, a sudden demand, too sudden to be met in that way, arising. Or, similarly, relief by removal to other trades or localities may, for the purposes of some problems, practically not be contemplated. The treatment of such cases will follow along lines sufficiently indicated by what has been said in reference to the cases actually considered.

In what has preceded, reference has been made to the adjustment of the supply of labour, as between different trades, by influences affecting the choice of trades by young men just entering on life. A few years may make a considerable difference in the supply, even of highly skilled labour, if strong inducements exist to select one branch of work rather than another at the moment when choice is least hampered. Later, a sacrifice of acquired skill must be made by a workman who seeks to change his trade, and such changes are therefore hindered, quite apart from any customs, or union rules, requiring definite apprenticeship, perhaps before a definite age.

Though individuals be not free to choose from a wide range of employments, the ability to choose among a small number may have important effects in changing the distribution of labour from one generation to the next. These changes of supply of labour in different industries affect the relation of the earnings of labour in one employment to those in another. The employments in which earnings are high, relative to the ability demanded and the costliness and length of the training required, will attract a larger relative share of the new supplies of labour than those in which the contrary holds. Earnings and ability tend to get proportioned the one to the other in such redistribution. But industry is in constant change, and thus the complete adjustment of earnings to ability may not be secured, though it may be constantly approached. The more active and intelligent the selection of the most promising openings by or on behalf of the adolescent, the more surely and rapidly will the adjustment be approximated to. But the point aimed at does not remain fixed, its changes cannot be precisely foreseen, and thus the complete adjustment is not secured. In the degree in which heedlessness, or the pressure of circumstances, compel the selection of trades without relation to the fitness of the individual to the work to be done, a waste of power results, in the sense that ability to perform much-needed work is possessed by those engaged on work to which they are not specially fitted, and in which they can be readily replaced.

Taking industry as a whole, it is conceivable that, even if the supply of labour were duly distributed between the different trades, so that neither the workmen would gain, nor the value of their product be increased, by any redistribution as between trades and localities, yet the marginal productivity of labour might be at a level not corresponding with the wage-rate which would suffice to maintain the labour supply without increase or decrease of abundance. We must now give attention to the reaction of supply and demand on each other as related to the problem thus suggested, that is, we need to consider the influence of economic conditions on the movements of population, on births, marriages, and deaths.

The question of whether a given level of wages will suffice to maintain the supply of labour, introduces the consideration of the standard of living among the recipients of the wages. In order to reduce the problem to one which shall deal with but one point of prime importance at a time, we may suppose that the conception of a given level of wages includes, not one uniform level, but such a set of rates as, in their deviations from one another, do not set up movements of labour from trade to trade or from place to place. A change in the level will, therefore, imply a change of the advantages of each trade which cannot be adjusted by a simple movement between trades. We thus concentrate attention on a feature of great importance, but one liable to be confused by the co-existence of many trades, with varying advantages, and with supplies of labour which may be recruited or reduced by interchange between trades or places. The industrial world is thus effectively reduced to a world where each industry can be separately considered, or where we may proceed as if there were but one industry. The standard of living we consider has reference to this industry alone.

What will be the result if the remuneration of labour fall short of the amount demanded by the standard of living? This amount suffices to provide the necessaries and comforts of life according to the habits prevalent among the workers, and includes provision for the maintenance of a family. The former is implied in the supposition that personal ability to labour is maintained, for when expenditure is reduced, some reduction takes place, in practice, in the expenditure which contributes to efficiency, as well as in that which has its chief object in affording satisfactions secured for their own sake. What has become conventionally necessary is yielded up with as great reluctance as what is demanded for the satisfaction of primary physical needs. The inclusion of provision for a family in the conception of the standard of living is demanded by the consideration that we are examining the conditions of existence of a class, not of individuals. That the class may be maintained in undiminished numbers, provision must be made for the rearing of children and their industrial training. Wages must, in fact, cover the necessaries of the wage-earners and of the dependent members of the class as well, those too young to earn, those engaged in rearing children, those too old to support themselves. The wage which affords the means of attaining to the standard of living of the class is the supply-price of the labour of that class, and the preceding remarks have reference to this fact rather than to anything specifically stated in the words "standard of living."

If wages, then, fell below the amount needed to maintain the class standard, the supply of labour will be reduced, either in amount, or in efficiency, or in both. Reduction in amount may obviously proceed by a drain to other classes, but that has been excluded from the present discussion, and if the drain form no part of the redistribution of labour among various employments, required when some trades have a deficient supply while others are overcrowded, merely transfers the problem of excessive supply to another class of labour.

The only other mode of reduction in labour supply is that of a reduced birth-rate or increased death-rate, or a reduction of the work obtainable from each individual may take place. Privation may render the members of the class more liable to attacks of disease, increasing the loss of working time from that cause, and resulting in earlier death or incapacity. As stated above, the fall in earnings below the amount needed to support life on the class standard does, in practice, lead to some reduction in the amount, or deterioriation in the quality, of the consumption of what contributes to physical health and strength, even though earnings still suffice to provide for some consumption of luxuries. This reduction of the more essential parts of consumption reacts on the efficiency of labour, which is also affected by the moral or intellectual attitude of workmen in reference to work which they regard as inadequately remunerated.

In addition to these influences on the working efficiency of the living, it is necessary to consider the influence of reduced means on the natural increase of numbers. Though it may be true that some classes are reckless in regard to the responsibilities of parentage, and that, in consequence, their birth-rate shows no response to decreasing prosperity, the more intelligent members of the wage-earning classes, perhaps all except the very lowest grades, are influenced in this respect by adversity. A fall in earnings operates to retard marriage, since the class standard of family life cannot be supported on the reduced earnings. How general this influence is can be seen by comparison of the marriage-rate in prosperous and dull times. The differences may be small, but they are real and not negligible. A check to marriages brings about a reduction in births, thus checking the supply of labour at the fountain-head. A further point, already touched in passing, affects even the reckless lower classes whose birth-rate is uninfluenced by their economic circumstances. Lack of means results in harder conditions of life for all, and especially for very young infants, and the survival-rate is touched even if the birth-rate be not affected.

The reduction of wages below the level needed to maintain the class standard of living, then, operates to check the supply of labour. If the class standard be unyielding, this reduction of supply will be slowly brought about. If the work-people rearrange their plan of living to suit their reduced means, their efficiency will be reduced. Their earning power being reduced, the demand-price for their labour will follow suit, and thus a fall in wages, which produces no response in a reduction of numbers, contains in itself the possibilities of a progressive degradation of the condition of the class affected. It is, of course, quite conceivable that, with wiser expenditure, a reduced income might serve to provide necessaries as plentifully as a larger one, the change being mainly one touching superfluities. In reference to this, it may be repeated that, in practice, reduction of income is not found to result in the simple cutting off of superfluous consumption. Some concurrent reduction of physical necessaries goes on as well. Further, the reduction of consumption, in the direction of cutting off whatever exceeds the physical necessaries for efficiency, operates to modify the willingness to work at high pressure, even if the ability to do so be not affected.

It is clear that increased wisdom in expenditure might contribute as effectually as increased wages to ensure ability to work well. The expenses of production of commodities might, therefore, be decreased by true economy in consumption, as well as by economy in the organisation of processes of production. Still more, the real satisfactions of life might be considerably added to by such care in spending, so that, with given earnings, a fuller life might be enjoyed.

While we acknowledge these facts, and regard them as of very great importance, they must be admitted to have but little bearing on the problem before us. Practically, we have to take habits of spending as they are, and not to seek justification for a low level of wages in any reflection as to the best conceivable way of spending the wages, and their adequacy to provide necessaries of life, and something over, if spent with ideal wisdom.

The prevalence of a wage-level below the equivalence of existing standards of living will, then, result either in a reduced supply of labourers or in the acceptance of a lower standard of living. In so far as the latter results, quite apart from the probable influence on the efficiency of labour when expenditure on its maintenance, and on its training, is reduced, the influence of the competition of growing numbers in an already over-supplied field must be considered. Increase of numbers employed tends, as we have seen, as a rule, to reduction in the marginal productivity of labour, and thus a further reason for a lowering of the demand-price is seen.

We turn now to consider the results of a wage-rate above the equivalence of the standard of living. The preceding discussion will enable a brief statement to suffice. The more ample means are likely to lead to some increase in labour supplies, for reasons sufficiently discussed above in connection with the reverse process. Some part of the additional means may be used to enlarge the consumption of commodities, raising the standard of living if the enlargement be continued long enough to develop a corresponding habit of life. What was before stated, in regard to the cumulative effects of reductions of wages, may be said, in part, of the opposite tendency of increased earnings. Greater earnings may lead to the development of increased earning capacity, which may form the foundation for a fresh increase of earnings. Some stress may profitably be laid on a point mentioned in passing in the preceding discussion, and directly related to this. The increased efficiency may be seen, not in the actual earner of the relatively high wages, but in his children, who secure better conditions of life and better training. The class may advance even though the adult individuals in it at any instant do not.

In so far as the relatively high earnings lead to a more rapid increase in numbers, by excess of births over deaths, than would have taken place had earnings just corresponded to the actual standard of living, its effects must be noted. Increased competition for employment tends to induce the competitors to accept some reduction of wages below the rates current at the time. The increase of numbers employed tends to the reduction of the marginal productivity of labour, and thus to a reduction of the demand-price for labour. These features dominate the wages discussions of some writers. Those of the early nineteenth century, in particular, wrote as if the whole effect of advances in wages would be felt in increase of numbers of competitors for employment, and that, in consequence, the advantage would be lost, through the struggle of increased numbers for a place in the industrial hive. The standard of living, adherence to which provides a point of resistance to wage-reduction, was conceived of as necessarily yielding to pressure till it comprised the mere necessaries for existence. Hence these writers gave an impression that the condition of the wage-earners was one of little hope. The reluctance which is manifested to abandoning established ideas of what are reasonable conditions of life, manifested practically in the reduction (or inadequate increase) of the labour supply when that standard is threatened, with the correlative utilisation of increased opportunities, resulting in greater efficiency being secured when high wages provide these opportunities, lead us to dwell less on the deplorable condition of the least prosperous sections of the community than on the influences which help to maintain the advantages enjoyed by the more prosperous.

If, then, actual wage-rates be below the supply-price for the amount of labour needed at those rates, though the quantity of labour immediately available may be great enough to compel the acceptance of the prices offered, the supply will not be maintained. Similarly, if the actual rates be higher than the supply-price in question, the supply will increase. Time is required to work out these results, to a point where the scarcity or abundance of labour is felt as an influence on the market-price for labour, but the supply-price here considered, and the related standard of living, are nevertheless of real importance in the wages problem. The supply of labour does respond to the demand for it, though immediate necessity may compel the acceptance by labour of terms which, if anticipated, would have checked the growth of population.

Wages cannot permanently exceed the value of the net product of labour at the margin of employment, and competition tends to make the two coincide. Wages, too, cannot permanently fall below the amount needed to maintain the standard of living of the class to which the labour belongs, and competition tends to make these two also coincide. As, in the general problem of value, utility and cost of production each tend to equality with exchange value, so too in this special case. The utility here is measured by the value of the product of labour at the margin of employment, while the cost of production includes the cost of the necessaries and comforts of life usual in the class to which the workman belongs, together with such luxuries as are also customary, the workman's family as well as himself needing support as a condition of the continuity of the labour supply. One may, perhaps, usefully consider the cost of production of labour as comprising the maintenance of the labourer, including wear and tear allowance. That allowance provides for the replacement of the workman when his powers are exhausted, children replacing their parents. Thus the cost of maintaining a family bears some analogy with the cost of replacing machinery as it wears out, the allocations to a renewals-and-extensions fund which are commonly made out of the earnings of business enterprises. If it be objected that the expenditure of a workman is not wholly directed to keeping up working efficiency, an analogy is not wanting in the case of machinery or materials used in manufacture. Thus our present methods of using coal do not utilise nearly all the energy which its combustion develops.

The value of labour depends on its utility and cost of production, and, if equilibrium were fully worked out under competition, all three would have the same measure.

Even assuming monopoly control on either or both sides of the wages bargain, this correspondence is still the state towards which things tend, so far as men know their economic interests and seek them. For, under a monopoly on the side of the employer, the marginal productivity of labour would not be less important than with competition of many employers, though the monopolised organisation might give either a higher or a lower value to the productivity of labour than it would have under competitive organisation. The class-standard of living is effective whether the labourers contract individually or collectively for the terms of employment. Under collective action, however, the efficiency of that standard as a point of resistance to attempts to drive a hard bargain will, commonly, be greater than under an individual system of contracts.

Assuming that the demand- and supply-prices of labour differ, there is a greater degree of indeterminateness in the division of the difference where each side is represented by one bargainer, that is, when monopoly prevails, than under competition. But, when the bargain is struck, the elevation of the standard of living to the level of wages secured operates as truly in the case of monopoly as in that of competition, and, on the other hand, the fact that it is profitable to employ workmen who cost less than they earn serves as an inducement to extend the margin of actual employment in either case. The influence of monopoly is felt in the regulation of the output so as to yield the largest attainable profit on its production, regulating its amount as a means of influencing its value per unit, which consideration, it will be recalled, forms a distinguishing characteristic as between monopoly and competition. Thus the monopolist's greatest advantage may be realised when the net marginal utility of labour is measurably in excess of its cost. This, however, is hardly the same thing as saying that the demand-price is in excess of the cost. It is, in this case, hardly possible to speak of anything other than the contract-price as the monopolist's demand-price for labour.

# CHAPTER IX

# SPECIAL PROBLEMS OF WAGES

## METHODS OF REMUNERATION

SOME special attention may profitably be given to the problem of wages as concerned with various groups of labourers in regard to whom the conceptions developed in the preceding chapter in the matter of the standard of living will not apply. There are some notable cases where a wage insufficient to maintain even the individual worker, much less to support a worker and a dependent family, can be accepted without even a tendency to react on the supply of labour. A good illustration is afforded by the case of women's and children's wages. In regard to the latter, the supply-price is not entirely unconnected with the amount supplied, but is not limited by the expenses of maintenance of the children. Its relation to the permanent supply of child labour is bound up with other questions. The total earnings of a family, rather than the earnings of individual members of it, form the fund the relation of which to the standard of living operates on the growth of numbers. So far as the children are concerned, provided their earnings exceed the amount by which their maintenance at work is more expensive than their support without a wage-earning employment, there is an apparent gain from the wages. Against this gain some set-off is formed in the diminution of the services which the child is able to render in the home as a result of being employed outside it. Though this may, in a numerous class of cases, cover the grounds on which the availability of children for wage-earning employment is determined, the consideration of the later working efficiency of the child acquires importance in many cases, and must be regarded when the broad problem of the labour supply of the community is under discussion. On the one hand, small present remuneration may be offset by the acquisition of knowledge, skill, and experience, which will enhance the later earning power of the learner. On the other hand, the securing of some earnings at an early age may prejudice the physical and mental development of the child, and seriously reduce later earning power. To the extent to which the latter represents the facts, the permanent industrial capacities of a class may be sacrificed through a short-sighted grasping after immediate advantage. If the future loss were fully realised, and present necessity did not interfere to compel the acceptance of disadvantageous terms, the holding back of child labour, till it could secure a wage adequate to fully compensate for the loss of future efficiency consequent on interference with physical and mental development, would perhaps render unnecessary legal interference with children's labour. Holding for such terms would correspond to the restraint imposed on labour-supply by a standard of living of unyielding character. Such restraint on the supply of children for employment does not operate in practice, and a partial substitute, as a means of maintaining the industrial powers of the race, is afforded by legislative interference with the employment of young children.

Corresponding considerations, with such modification of detail as is necessary by change of conditions, apply to the case of young women's labour and wages. A large part of the supply is available at wages inadequate to maintain the worker. Those who depend on their own earnings for their maintenance meet with the competition of others whose support is secured independently of such earnings, and who are, in consequence, not restrained from ready acquiescence in a rate of payment which involves great hardship to the self-supporting worker. It may be said that some industries, employing young women at wages less than are needed to support them, secure labour which is partially provided at the expense of other industries. The cheapness of the products of such labour is, in a sense, fictitious. The full cost of the labour is not charged against its product when the labour derives part of its support from other sources than the earnings of the toil which absorbs all its working power. Some greater attention than is given it might well be devoted to the question, of how far the community gains from the employment of part of its labour supply under conditions which cannot yield a return sufficient for the maintenance of the workers. Certainly one important reason for the hardships of women who must support themselves by their work is found in the fact that the supply-price of labour, in many employments supplied by women, is not in any sense the cost of production of that labour.

A problem, which in some respects resembles that above discussed, is afforded by the lowest grades of unskilled labour. There the increase of numbers proceeds with but little regard for the relation of earnings to cost of living. Not only is the natural increase not effectively restrained by such prudence as influences the superior grades of labourers, but the numbers of the class are recruited from all the superior classes, the failures of which drift downwards to compete for work with the unskilled. The low wages earned by such labour in most countries are an index of the low value of the labour to the community. The need of society for the labour of so many of this class as are available is not very urgent, but, so long as this does not check the supply, it must result in hardship to the members of the overcrowded class. The hardship is the pressure urging to the adjustment of supply to the demand at satisfactory wages. The soundest measures of relief would be such as were aimed at relieving the pressure of competition in the class, especially by raising some of its members to a higher level of efficiency, and by checking the degradation of members of the superior grades. The former operation, and, in part, the latter also, would naturally be concerned with the children rather than with the adult members of the class, and would thus be aimed at the relief of congestion as these grow to maturity.

Before leaving the subject of wages, some reference must be made to the doctrine of the wages fund. In its extremest form this was stated somewhat as follows:—The total amount of wages is dependent on the amount of capital in existence, and on that alone: when this amount of capital is determined, therefore, the wages total is also determined: the average wage therefore depends simply on the number of wage-earners.

While this doctrine of wages was held, it necessarily followed that the only way to add to wages was to add to capital. Increase of wages to one group of labourers meant necessarily a decrease to other labourers.

The wages of labour are very largely expended on commodities for immediate consumption. The supplies of these commodities must therefore form the real wages, received in exchange for the money-wages. The proportion of the total capital of a community which will take the form of goods ready for consumption is not liable to rapid change. Thus there is a good deal of truth in the idea that wages, real wages that is to say, are related to the volume of the fund of capital.

But there is enough of elasticity in each of the statements of the preceding paragraph to deprive the general statement, of the dependence of wages on capital, of the importance formerly attached to it as a doctrine of wages. As has been repeatedly pointed out by critics of the doctrine, wages are a part of the income of society, while capital is a fund of wealth. Income is of the nature of a stream, the volume of which is doubtless influenced powerfully by the quantity of capital accumulated. But the stream may vary in volume a good deal without preliminary change in the amount of the capital fund, just as the stream from a reservoir may be increased in volume without waiting for an enlargement in the size of the reservoir. An increased flow of sufficient amount into the reservoir will maintain its contents in the face of increased outflow. This corresponds to the modern view of wages, as dependent on the product of labour. Labour secures a larger stream of income on condition of, and in recognition of, supplying a fuller stream of goods.

Increase of product and increase of income go on together, without necessary enlargement of the fund of capital, though it is true that capital is increasing, and that its increase permits such reorganisation of productive processes as to add substantially to the general income of society, of which wages form part. Increase of this income from such a cause may inure to the benefit of the wage-receiver, apart from any increase of his efforts, and thus the increase of capital remains an important consideration in the wages question.

In correspondence with the capitalist view of a wages-fund, we find a labour doctrine of a definite amount of work to be done, without reference to how many shall be engaged at it or on what terms they consent to work. This is the distinct implication of the theory, that an effective way to provide for the unemployed is for every man at work to decrease the amount of work he does, or the number of hours he works. If the decrease of the number of hours in a day's work do not diminish the work done, the grounds for increased employment as a result are difficult to determine. If we suppose shorter hours to mean equal work done, there will be some economy in operation, such as economy of motive power, unless this be offset by the consumption of greater power in securing greater speed for the shorter working day. Unless some more important source of economy than this be developed, the shorter working day will not mean any important cheapening of labour, with consequent increase of demand as the outcome of cheapened product. A shortened working day with equal work done would leave practically undisturbed the value of the labour and the demand for its product. Were the work done in the shorter day greater than that in the longer, it is possible that the product might be cheapened sufficiently to maintain, or even increase, the demand for labour. But such compensation of shorter hours by increased vigour of work is not contemplated by those who advocate shorter hours as a means of finding work for the unemployed. They regard their case as based on the need of society for a certain amount of work. Now, if the same product is turned out by more men, apart from the probable resultant increase of cost of appliances, etc., that amount of product will be in demand at the same price as before, and less will be demanded if the price be raised. The former earnings may, then, be distributed among the enlarged number of workers, or else the amount of work needed to be done will be decreased. As the reduction of hours is generally accompanied by a demand for equally high daily earnings, it is clearly based on a conception, of the relation of the different features of the case to one another, at variance with the simple conditions likely to be encountered in fact.

The minimum wage doctrine is not unconnected with similar ideas. It is claimed that wages must not be allowed to fall below a stated minimum. The assumption that employment for all can be found at or above that minimum is not justified. Fixing wages, so as not to fall below a stated level, means excluding from the possibility of employment all whose efficiency is so low as to make their net product worth less than the minimum. To assert that these must find employment in other trades or localities does not secure that such employment shall be procurable, in sufficient quantity, at acceptable wages. Where the members of a trade are able to set up, and maintain, a high level of minimum wages through limitation of their numbers, they are not necessarily to be blamed for consulting their class interests. The advocacy of a like policy for universal application is not so simple as its application to individual trades. If the minimum standard is higher than would have been secured without some limitation of freedom of entrance into the respective trades, an ultimate residue, of those unable to attain to the level of capacity needed to earn any of the established minima, must be left unemployable so long as the minima are maintained. An unsolved problem, how to dispose of this residue, would call for attention. Could it be solved without breaking down the minima? If these incapables were supported out of public funds or by private charity, would not the drain to provide the needed funds practically reduce the minima?

The practice of collective bargaining in the matter of wages, that is, settling the rates for entire classes of labour through negotiations between employers and more or less expert representatives of the workmen, acting on their behalf, is calculated to operate to the advantage of those thus represented, if only to their immediate advantage. How far their ultimate advantage as a class is secured, and whether at the expense of other bodies of wage-earners or not, will depend on the wisdom and ability of the negotiators. If nothing more is secured, the hastening of a rise of wages which circumstances tend to establish, or the retarding of a fall, are clearly advantages. Whether the organisation of labour has created the conditions assuring a rise in wages, or better earnings through more continuous employment, when those conditions would not have been established through the changes in the general economic situation, is an unanswered question. The influence of the trade unions, in gathering information as to where labour is in short supply, in enabling out-of-work members to go to places where employment is abundant, in providing for the maintenance of labourers when out of work, thus avoiding the loss of working power, for the maintenance of which the inadequate savings of workmen do not sufficiently provide, in providing relief in case of sickness, and other friendly-society benefits, is important and tends to the improvement of the condition of their members.

It is not proposed to discuss strikes and their economic effects here, but it may be noted that the consciousness that an opponent is strong enough to make a good fight may stimulate to the settlement, by peaceful negotiations, of points which would have led to a struggle with a weaker opponent. Strong unions serve, therefore, to substitute negotiation for strikes in the settlement of industrial difficulties, though they have by no means rendered strikes unnecessary, or deprived them of some of their most obnoxious features. A strong, well-officered union, too, can do more to ensure the observance of a contract between employers and workmen than a weak, ill-disciplined union.

The operations of large unions, covering the whole of a trade, sometimes result in compelling the observance of rules by the less scrupulous employers which are by no means obnoxious to the better-disposed, but which, if observed by the latter and ignored by the former, would give a competitive advantage to those who ignored them. Certain principles are, in fact, laid down, aimed at protecting the employees of the less scrupulous from acts from which the better disposed would be glad to refrain, but for fear of competition. By imposing on all alike conditions agreed on between representatives of employers and workmen, the forces of competition are not destroyed, but diverted into channels where they are believed to be less likely to involve injury to the wage-earner.

In passing, attention may be called to one point in the wages problem noted by the late General F. A. Walker. It is that the wages problem proper is concerned with the remuneration of those who are employed in occupations where the result of their employment is looked to to provide the means for their payment. Industrial employment, rather than domestic employment, is our problem. The employer of domestic servants may become more able to pay high wages as the result of his profits in employing other labour, but not as the result of the work of the domestics. A man does not pay high wages because he is rich in the cases with which we are most concerned. He may be rich as the result of paying high wages, if high wages connote great efficiency of labour. It is not what he has, but what he expects to get, which enables and induces him to pay wages. These wages are the condition of controlling the labour of his employees, and of being free to direct it to those purposes of production from which he anticipates making good those wages, as well as other expenses, and securing a profit in addition. The supply of labour available for domestic and other personal service will, of course, depend in large degree on the power of the offered remuneration, and other conditions of service, to attract labour from other employments, and hence the level of remuneration in those other employments is an important factor in the problem.

Since the efficiency of labour has so important a bearing on the rate of remuneration of the labourer, some attention must be given to the influence of the mode in which the payment to the labourer is, in practice, made to depend on the work done. The two leading varieties of wage-payment are time-wages and piece-wages. The former, in which the amount earned depends directly on the time spent at work, offers no stimulus to economy of time, while the latter, proportioning payment to quantity of work done, stimulates to the performance of a large amount of work, but does not directly check the deterioration of its quality which may result from undue haste.

It is clear that the employer cannot be indifferent to either the amount of work secured for a given time-wage, or the quality of work done on piece-wages. The fact that, in many employments, the workman is afforded the assistance of costly appliances means that slow work is expensive work, even if only paid for in proportion to the quantity of product, much more if paid by time. The earner of time-wages, therefore, risks loss of employment if he fall below a satisfactory standard of speed, while the piece-worker will need to attain to a minimum standard in the quality of his work, under a like penalty. The conditions which determine the rates paid have been considered in the present and preceding chapters. Where the choice can be made between the two methods of assessing the payment, that one will be chosen which gives the cheapest work, and thus an influence, tending to make the two modes of payment give substantially the same result, so far as cost of labour is concerned, is operative. Some kinds of work are not readily adapted to payment by the piece, and for them time-wages must be used, and any stimulus to smartness will come from the supervision of the employer or his foreman. Under piece-work men are said to be apt to overstrain themselves, wearing themselves out at an early age. This is not universally observable, though in some cases trade unions substantially restrain their members from setting too severe a pace, independent of their own powers of standing the strain. Various methods are employed to check the spoiling of the work through too great haste, such as fines for defects, graded according to the nature of the defect, or the rejection of bad work entirely.

The above-named methods of payment are varied, and to some extent combined, in what has been called task-wages. In this arrangement, the labour contract stipulates for the completion of a given quantity of work in a given time for an agreed wage. If the quantity be not completed, fines for deficiencies are imposed. This plan aims at making explicit a feature of the bargain which must be important, whether definitely named or not. The employer of labour at time-wages expects to receive service sufficient to do a definite amount of work in that time, and the task-wage penalises shortcomings by fines, while the only penalty available otherwise is dismissal. The resort to dismissal in cases where the work done fails frequently, or regularly, to attain a satisfactory standard, is clearly not excluded by the fine system.

As a means of stimulating to special diligence, various systems of bonus, for work in excess of a fixed standard, are in use. Some of these are known as progressive wages. This name applies to cases where a fixed piece-rate is paid for all work not exceeding a stated limit of quantity per hour, per day, or per week, and, for any output beyond this quantity, a higher rate is paid. Occasionally, in place of a single limit, above which rates are increased beyond the normal, several such limits are fixed, and, as each is passed, a higher rate becomes payable, for all output in excess of that limit, than for what falls below the limit.

The conditions of employment frequently require that workmen should work in groups, each member of which is engaged in contributing his share to the common task. The output of the group may be capable of measurement, and be conveniently paid for at a piece-rate, while the work of each individual is not readily measured independently. If the members of such a group divide the payment for the group's output in fixed proportions, the earnings of each will depend on the work of all. In such a case the different members of the group may stimulate each other to diligence, or at any rate check slackness on the part of individuals. Such mutual supervision by interested fellow-workmen may reduce the necessity for close supervision on behalf of the employer. Should the system of progressive wages be applied to the group, a further stimulus to diligence is provided. In such cases of group-wages, we have to consider the conflicting tendencies, of the desire of each to prevent loss to himself through incapacity or neglect on the part of his fellows, and of the weakening of the motive for exertion by the fact that the benefits resulting from extra exertion do not accrue wholly to the man who is called on for the exertion. The part assigned to any one individual may be sufficiently small to make it appear hardly worth while striving for. The larger the group, the smaller the stimulus to do work from which the chief gain falls to others, and the more ineffective the mutual concern to check fellow-workmen from bringing loss on the group.

A number of developments of group-payment, aiming at enlisting the personal interests of the workmen in the efficient performance of work, have been devised. A typical form is that of assessing the cost of a particular task, assigned to a group of workmen, in accordance with a standard or usual rate of working and of payment. The workmen are secured the regular rate of time wages, and share in any difference by which the actual wages-cost of the task may fall short of the standard rate as assessed. It will be obvious that this plan affords a stimulus to extra effort so long as the standard rates are not reduced in correspondence with what experience shows to be possible rates. Should the workmen suspect that the opportunity for gain, held out as an inducement, was being nullified by fixing the standard cost in accordance with the actual wages-cost attained by unusual exertion, not only would the motive for exertion be gone, but the willingness of the workmen to work diligently might be reduced even below what it would have been had no such premium-plan been tried. It will be clear that the whole of the economy on standard cost will not be assigned to the workers as a rule, for, in order to effect the greatest possible economy of time, some co-operation from the side of the employers is needed, and this may involve expense. In one way or other, there must be a prospect of profit to the employers from the realisation of the economy on the part of the workmen, and part of that profit usually consists of an agreed percentage of the sum the remainder of which constitutes the premium on wages to the workmen.

If, instead of thus calculating the profit, on each task, realisable by extra effort on the part of workmen, a bonus be paid on wages out of the net annual profits of the employer, whether individual or partnership or company, an interesting variety of a supplement to ordinary wages is afforded. The bonus may be assigned arbitrarily to individuals selected by the employer, and its amount may be varied at his discretion. Though it may afford some stimulus to diligence, if so assigned, its effect is not so general as if all shared in it. When the proportion of net profits to be given as bonus on wages is definitely fixed, and the distribution among the recipients takes place on a pre-arranged scale, the plan is known by the name of profit-sharing. The usual basis of distribution is to make the share of each workman proportionate to his year's earnings. Effectively, the wage-earners are thus made sleeping partners in the business, and in some cases they are assigned an active partnership through the assignment of the bonus in shares in the business, either wholly or partially. The possession of shares, acquired in this way, is usually accompanied by a right to elect one or more representatives on the managing board of the business. The enlisting of the interest of employees, in the success of the business in which they are employed, may evoke greater care and increased effort in their work, and thus create an equivalent for the bonus assigned them.

In some cases, the acquisition of shares, as described above, has resulted in the entire business becoming the property of the employees, and, as such, managed by their representatives in their interest. But the ownership of businesses by those employed in them has also arisen independently, in pursuance of a plan to secure for workmen the profits of the employer, to make workmen their own employers. This form of industrial organisation is known as productive co-operation, and must be distinguished from the co-operation which consists of associations of consumers for the purpose of dealing in the goods which they need. This distributive co-operation or co-operative shopkeeping has achieved marked success in Great Britain, and has served to enable co-operative industrial enterprises to be set on foot. Capital accumulated in one class of enterprise has been invested in the other. It will be obvious that co-operative production relies for success on the favourable balance between two opposing tendencies. The operatives are stimulated by the sense of proprietorship in the concern where they are employed, and by the assurance that whatever their efforts contribute to its profits is, in part, a gain to themselves. But the success of modern industrial enterprise depends in a very high degree on the ability and devotion of its management, and these are often bound up with the independence of such management. When the employer is displaced, so far as the profits of the business are dependent on his abilities, they disappear. In practice it would appear that the displacement of the employer goes far to destroy the profit, a share of which was the motive for displacing him.

In profit-sharing, and in co-operative industry, the remoteness of connection, between any individual's effort and his share of profits, operates to weaken the stimulus to exertion found in the profits. The advantage arising from personal effort is shared among a host of others, and only if they display extra diligence in their turn can this effect be offset. Since personal gain usually stimulates to exertion more powerfully than advantages secured by one's fellows as the result of one's efforts, the effect of the share of profit, as a stimulus, is not as direct as can be secured by other methods. Moreover, the entire effect of devoted effort on the part of wage-earners may be lost through mistakes or misfortunes of the management, and this again weakens the stimulus afforded by anticipation of a share in profits, on account of their doubtful amount. The moral effect of the sense of proprietorship in the one case, or of being treated with justice and consideration in the other, is not to be ignored as an influence on work done. While the magnitude of earnings has a most important effect on the physical power to labour which their expenditure supports, the sense that wages are assigned with justice, and a degree of contentment with the industrial situation, aid in ensuring a willingness to use that power to the best effect. Efficiency is not wholly a question of the material return secured for labour done, but largely also a question of the mental and moral attitude of the workman towards his work.

One further method of assigning to labour a share in any advantage which economic conditions assure to the industry in which it is engaged may be briefly noticed, namely, the adjustment of wage rates by what is known as a sliding-scale. This method is employed in some cases, such as coal and iron mining, where the general condition of prosperity of the industry is fairly accurately reflected in the market value of its product. Though this value is far from being a complete and accurate measure of employers' profits, it is practically accepted as the measure of the claim of labour to a share in the good times which bring profits to employers. The usual arrangement is to select an agreed price of the product or material with reference to the value of which wages are to be determined, and to fix the rates of wages which are to prevail when the price differs from this selected standard by less than an agreed variation. Then all wage rates are advanced or reduced by percentages corresponding to the difference between the standard price of the product and its actual price for the period in reference to which readjustments of wage rates are effected. A recent example is the wage-scale laid down by the Arbitration Commission for the anthracite coal miners in the United States. Standard wages, namely those in vogue at a given date, are to be paid when coal sells at $4·50 per ton, and are to be increased by one per cent. for each addition to that price of five cents. For the purposes of applying such scales, the selling price requires to be determined, and this is commonly done by a submission of books, in confidence, to accountants appointed for the purpose. The agreement as to a scale may provide for its application only within an assigned range of prices and of wage variation.

The use of a sliding-scale assigns to labour a share in prosperity or adversity in automatic fashion, and thus removes no small part of the occasion for conflict between employers and employed. It is not ideally just in operation, and is not readily applicable to most industries, though more widely applicable than applied. In case of a considerable and permanent change in prices, the scale would be apt to give either more or less than was contemplated when it was settled. The agreement on a new basis for a scale provides as wide a scope for industrial conflict as ordinary disputes about wages where no scale is used. Yet some increase of smoothness in industrial relations, and of stability of conditions touching wages, is assured where such scales operate, and the very crudity of the approximation to justice which they afford ensures that simplicity which makes them intelligible, and thus aids in ensuring support and trust. One weak point is that workmen are induced to believe that their employers resist reduction of price less strenuously when that reduction carries with it a lessened wages-bill.

# CHAPTER X

## THE PROBLEM OF PROFITS

### THE EMPLOYER'S SHARE IN DISTRIBUTION

THE profits of the employer of labour remain for consideration. Are these arbitrary or do definite principles determine their amount? It is clear that mere possession of a producing establishment will not suffice to ensure an income to its possessor. Where one man realises loss, another secures substantial profits. The capacity of the management determines whether the one or the other result is secured. In older discussions, the revenue of the owner and manager of capital were hardly differentiated. The capitalist-employer was the central figure demanding consideration. He was undertaker of business management and risks, and employer of labour, because, and to the extent to which, he was a capitalist. Changes have come over the organisation of business. The manager may be to some extent a capitalist, but the quantity of capital he controls is not limited to what he owns, or even to what he can borrow on his personal credit or on the security of his property. The joint-stock form of business organisation has enabled managing ability to be more readily associated with opportunity for its profitable exercise. The possessor of the managing power may be the possessor of capital totally inadequate to enable him to use that power effectively. The owner of capital may lack disposition or ability to venture the capital in an enterprise under his own direction. These circumstances have, however, much less power than formerly to prevent the acquisition of control of capital by those fitted, by ability and training, to use that control to advantage.

Where the control of capital is exercised by hired managers, the problem of remuneration does not differ in its general nature from the problem of wages. The demand-price for such services is limited by the ability of the manager, that is, by his power to organise and conduct the business so as to produce a profit. By so much as the ability of one man exceeds that of another, as measured by their power to render an enterprise financially successful, by so much may the proprietors offer a higher salary to the more capable, than to the less capable, without being worse off as a result.

The supply of ability available for business management is partly, though not wholly, dependent on the rate at which such services are paid. For the more difficult managing posts, the capacities required cannot be produced by training, though much may be done toward their development by appropriate training. The attraction to men to devote their powers to business rather than to a profession, to one business rather than to another, is partly found in the earnings anticipated. The more certain these are, provided they are adequate, the higher they are, provided they are reasonably certain to be secured by the possessor of ability of a given order, the greater the number who will be attracted to compete for these gains.

An attraction more powerful than large earnings, at any rate as affecting the highest positions in industry and commerce, is the opportunity offered to exercise control over masses of men and complex organisations. The satisfaction of leadership, the delight in planning new combinations of appliances or men, probably constitute a large part of the reward, which really counts as such, to men of high constructive ability, though they are not indifferent to pecuniary gain, and require to have an income of considerable amount. When the income secured once becomes very large, the variations in it hardly form the measure of the motive which stimulates to exertion, though they constitute the compensation for exertion and enterprise. The large incomes of successful business men do form, however, an important part of the attraction which brings in competitors for these gains. In this sense they are an important feature in influencing the supply of capable men available for undertaking the control of business enterprises, new and old.

With regard to the earnings of managers of business, the considerations adduced in relation to some special classes of ordinary labour apply in a special degree. At any instant, the supply of such ability available may be either abundant or scarce relative to the occasions for its profitable exercise. The remuneration of the individual is much of the nature of rent. But the amount of the remuneration can and does react on the supply, so that it is a quasi-rent, not a true rent, with which we have to deal in this case.

Looked at as a rent, the remuneration of the entrepreneur may afford some further useful reflections. Rents are, in their nature, differential payments. The capable entrepreneur reaps a reward corresponding to his superiority over less capable men with whom he is in competition. He does not secure his gains at the expense of labour or of capital. If he gets the use of capital on better terms, it is because of the lower risk associated with his control than with that of others who pay a higher rate. So far from hiring labour at a lower rate than struggling competitors, the conspicuously successful entrepreneur often pays somewhat higher wages, and quite commonly gives more favourable conditions of employment, than the less successful men can give. So far as the gains of the highly remunerated entrepreneur exceed those of the less successful, they are certainly not secured by enforcing harder terms on labour than labour secures from these rivals. A plea often acknowledged as valid by workmen is that their employer is barely able to hold on, and unable to give higher wages, or even unable to continue existing rates. The obviously struggling employer, in a small way of business, meets with the sympathy of wage-earners, though he does not give better terms to his employees than his more successful competitors give.

An important question is, What degree of competence is necessary to maintain a place in the ranks of employers?

what degree of incompetence can avoid being driven out of those ranks? On this question not a little depends. The most expensive entrepreneurs, whether regarded from the workman's point of view as a wage-seeker, or from the point of view of the community, interested in the most effective possible organisation of its resources, are those who just hold their own as employers, who just avoid being compelled to give over the control of industry to others. Now the need of the community for organising ability, considered in relation to the supply of such ability, will determine to how poor a grade resort must be had in order to get the work done which is required to be done. Just as, in agriculture, the need of the community for produce, in relation to the supply of fertile land, determines what degree of infertility of soil must be resorted to, to secure the necessary food supply, so also in the corresponding case of managing ability as just stated. Whether the earnings of the employers who just maintain themselves as employers be regarded as made up wholly of wages, such as they might get if employed by others in a subordinate capacity, controlled instead of controlling, and in no degree of profits; or whether we call the whole of the earnings, even of these entrepreneurs, profits, the important implication of this view of the case will be substantially the same. It is that the community stands to gain, and that wage-earners stand to gain, by every elevation of the grade of the lowest rank of entrepreneurs. If the managing work can be done entirely by a high grade of managing ability, it will be done more efficiently. Further, the implication of this is that men who possess managing power are relatively plentiful, and this is the essential condition for their being obliged to be content with a relatively small share in the product. Thus the organising work would be better done, causing the product to be greater with the same resources for producing it, while the share of the produce which is needed to remunerate the organisers is reduced, thus leaving more for distribution among the rest of the community. Labour stands to get some share in this increase, and thus has an interest in having as high a grade of ability among entrepreneurs as possible.

How, it may be asked, can such a result be promoted? One method is to develop as fully as possible all latent capacity, which may be assisted by efficient general education. Of methods whereby able men may be assisted or encouraged in establishing themselves in business, in spite of not owning any considerable capital, nothing further will be said here. The aid which they might render in establishing a competition between those possessing ability is sufficiently obvious. But such competition brings up the question of who is to survive, or how those worsted in the struggle are to be eliminated. Whatever provisions of law check men from trading with the funds of others after they have become insolvent, covering losses due to their own inadequate capacity for management by using funds the loss of which cannot add to their personal losses, must aid towards this. The continuance of such people in business is not merely a loss to those whose funds provide the means to cover their deficits, but it is a loss to the community as a whole, inasmuch as it means that some of the resources of the community are being used for purposes where they do not reproduce themselves in their use. A destruction of capital is in progress. Trade secrecy aids substantially in enabling losses of this kind to remain hidden long enough to become serious, and the increasing publicity of business may do something to check such loss. In view of the growing complexity of business affairs, as a result of which publication of periodical balance-sheets fails to reveal the real standing of the business to which they refer, too much must not be expected of publicity as a restraint on the continuance of an enterprise after it has definitely entered on a career of failure.

A good deal of discussion has taken place as to the nature of the services for which profits form the remuneration. So long as a man in business was, in large degree, owner and manager at the same time, his remuneration naturally covered the return to capital and to organising effort. The growing use of capital by others than its owners, leading to the establishment of systems of hire and loan of capital, required the separation of the remuneration of the capitalist, the mere owner of capital, from that of the undertaker of business management and risks. Later, we have seen the growth of a great system of joint stock enterprise, where the management is in the hands of salaried employees in the main, the control resting with the shareholders, and being exercised through their board of directors. The services of the manager of the detailed organisation of business are thus more markedly separated from responsible ownership than when the owner, though not providing all the capital in the business, was yet the responsible owner, hiring the services of capital, and bearing the risks as well as the responsibility. The replacement of the independent owner of business enterprises by a salaried manager serves to suggest a further analysis of profits. Formerly used to include interest, the word came to designate the earnings of management. This phrase readily suggests an analogy between wages and the remuneration of the manager of a business. The latter comes to be regarded as a specially important member of the wage-earning classes, which have long been held to include the salaried subordinates of the manager-in-chief. As just pointed out, the later organisation separates the remuneration of the manager from that of the owners. The former takes the form of a regular salary. The shareholders as entirely buy out the pecuniary interest of their manager, in the outcome of his work, as he buys out the pecuniary interest of the weekly wage-earner, in return for a regularly recurring payment. Where the manager receives a bonus proportioned to profits, this statement is not entirely accurate, but the payment of a bonus in addition to wages does not destroy the general nature of the wages-payment.

The distributive share known as profits, then, has, in practice, had the remuneration of the services of management cut out of it. What is left, profits proper, represents the share of those who take the risks and assume the responsibility of dictating the general lines of policy which the manager is to carry out. It does not destroy the importance of this separation if it be acknowledged that the manager's advice, as to the lines of policy desirable to adopt, is substantially accepted and acted upon by the shareholders and their board of directors. The responsibility becomes theirs, they suffer reduction of dividends or loss of capital if the policy be unsuccessful, and to them accrue the advantages of a successful policy in increased dividends and appreciation in value of their shares.

A question arises whether the risk-taking function, over the whole field of industry, secures any distinct distributive share of the product. Some bodies of shareholders gain, others lose. Is it necessary for gains to outweigh losses in order to ensure that capitalists will take risks? Capitalists can avoid some risks in investing their capital, by selecting those investments which carry a minimum of risk. Government bonds, debentures, or even preference shares, involve less risk than ordinary shares of industrial enterprises. Is there anything more involved, in the selection of the latter rather than the former, than a disposition to take risks, and a willingness to take them if they bring a right of control with them? It seems probable that some residual compensation for risk-taking is necessary, that if ordinary shares are to have the same capital value as mortgage debentures of the same business, the probable return on the former must exceed that on the latter. If large sums were invested in a wide variety of these two kinds of securities, the average netted on the shares would be somewhat higher, in all probability, than that secured on the debentures, the difference representing the valuation of the risk, the remuneration for risk-taking: in this case the more exact mode of expression would be to refer, not to the risk-taking absolutely, but to the difference between the risk-taking in the two classes of investments.

It has been stated above that the right of control and the assumption of risks of management go together. So far as the risk is one which wise management can reduce, the association is quite natural. Risks are associated with all kinds of investments, and the investor can secure some compensation for selecting his risks wisely in a higher return as the result of that selection. The ordinary shareholder not only takes the risk of what may happen to the property of the concern whose shares he buys, but has at any rate a nominal right of affecting the amount of that risk by influencing the selection of the policy to be followed. The application of the term "profits" to the income secured by the exercise of such a function does not confuse the risk-taking of the speculator in bonds with the risk-taking of the owner of an industrial enterprise. There are sufficient analogies between the two cases, and it is significant that the term "profits" is applied to the speculative gains of the buyer and seller of stocks and shares.

A significant trait in some recent developments is the tendency to acquire, on behalf of a definite capitalist or group of capitalists, the majority of the shares of various concerns, with the deliberate intention of shaping the policy of the concerns. The common neglect of shareholders to exercise their rights might have made a discussion such as the preceding seem wide of the mark, had not a good deal of emphasis been laid on the essential points by actual proceedings in the business world. It has some of the appearances of a reversion to the type of business organisation in which the responsible owner hired capital and other agents, and directed his enterprise. The later phase is one where the responsible owners will have less to do with the detail of management than in that earlier private ownership, but not less of assertion of their right and intention to determine the general methods to be adopted and the goals to be aimed at.

As some reference has been made above to speculation, some slight further discussion as to the nature of the function performed by speculation may be in place here. It may be acknowledged that every producer for a future market, that is to say practically every producer, is to some extent a speculator. He anticipates what will be wanted, at what prices and in what quantities, and sets to work to provide a supply in accordance with those anticipations. If his anticipations turn out to have been sound, he profits, if otherwise, he loses. The adjustment of the different parts of the productive force of the society, to the satisfaction of its various needs, depends in very great degree on the correct formation of these anticipations.

The speculator, ordinarily so called, is either blindly gambling, or is engaged in intelligently anticipating the future. The former class of speculators can hardly be too strongly condemned. They are as likely to guess wrongly, and so lead to a greater diversion of productive energies, to ends which will turn out useless, than would have taken place had they been inactive, as to guess rightly. It might probably be maintained that the chances are in favour of the former. But the speculator who devotes himself to securing some indication of what the future's needs are likely to be, if he be reasonably capable, is likely to guess right more often than he guesses wrong, and thus his acts lead to a balance of advantage, in securing a better adjustment of productive energies to the needs which materialise than would take place without his interference.

As an example we will take the case of a speculator in wheat who finds reason to anticipate a shortage in the harvest. He seeks to buy early before others realise the shortage. As a result, especially if others follow his example, an early rise of price occurs, checking consumption, and thus providing better resources for the time of need than would have remained had no such early check to consumption occurred. In the converse case of excessive supplies, stores may be reduced by an early fall of price, and thus the effect of excessive harvest supplies be somewhat modified, since the previously existing supplies have been removed before the glut occurs.

In considering the economic service rendered by the speculator, there has been held in view such operations as are based on facts, and reasonable anticipation of facts, not such as are based on false rumours deliberately given currency for the purpose of reaping a profit. The utilisation of such modes of making gain by deceiving others need not blind us to the real service, which is founded on no deceit, and which assists in making the adjustment of production to demand take place more smoothly.

# CHAPTER XI

# MONEY AND THE MECHANISM OF EXCHANGE

THE direct exchange of commodity for commodity, what is known as barter, presents difficulties which hamper the growth of such exchanges. It is, indeed, a system suited rather for a primitive state of society than for such communities as have developed in the Western World. Where this system prevails, the advantages of elaborate division of labour and specialisation of employment can be realised in but small degree. The importance of money in facilitating economic development is not always fully realised because of the familiarity of that important instrument of exchange. There are two fundamental services rendered by money, and some other important derivative services. For the free conduct of exchanges it is desirable that we should be able to express the values of the different commodities available for exchange in common terms. This is perhaps a more important service of money in modern communities than the second, which is concerned with the difficulty of pairing desires for and supplies of goods. If commodities could only be exchanged directly it would be necessary to find two persons, each of whom possessed, and was ready to dispose of, what the other wanted, and only to the extent to which such pairs of persons could be found would ready exchange be possible. In a community whose needs are not very varied and whose resources are also limited in variety the difficulty might not be insuperable, but very little reflection shows how serious this question of pairing wants and supplies is in modern civilised societies.

If a commodity exists, supplies of which are required by most members of the community, there is created a possibility of effecting exchanges in two stages which could not be effected directly. Thus clothes might be exchanged for, say, wheat, and, again, agricultural implements suited to this stage of development of the society concerned might also be exchanged for wheat. The maker of the clothes might not desire implements, while the maker of the implements might desire clothes. The possibility that each might be prepared to accept wheat in exchange for his produce enables the gratification of desires where a complete pairing of such desires cannot be brought about. The instrument maker sells his instruments for wheat and buys clothes with that wheat. The acceptability to the maker of clothes of the wheat, when implements are not acceptable, permits of an arrangement of exchange otherwise impossible. The process of indirect exchange has a further advantage with reference to the difficulty of pairing desires and supplies. When commodities are exchanged directly, unless the commodity to be disposed of has a value equivalent to that of the commodity to be acquired, a satisfactory direct exchange cannot be arranged. There is a balance of value on one side or the other which needs to be measured and expressed, and the recovery of which needs to be ensured. With such an intermediary commodity as wheat, enabling an indirect exchange to be effected, the adjustment of the values exchanged presents no serious difficulty. If the two commodities to be exchanged are of unequal value, the first holder of the more valuable commodity will find himself, after the exchange, with the less valuable, and, in addition, a supply of wheat covering the difference in value and available either for direct consumption or for acquiring some other needed article.

It is fairly obvious that, in order to become established as a general intermediary commodity in exchanges in the manner described, the special article selected as intermediary must be one for which there is a general desire. In more developed communities that desire, based upon the character of the commodity itself, may be replaced by a desire based upon the authority of the ruling powers. It is, in fact, not essential that the desire for the intermediary commodity should rest upon the power of that commodity to satisfy directly the needs of its holder. It will be sufficient if the holder can be assured that he will be able to dispose readily of any supplies of this commodity which he may have, and to acquire in exchange for them other articles for which he has need.

The articles which serve for the purpose of measuring values, on the one hand, and of being used as media of exchange on the other, are generally known under the title of money, and the suitability of an article for use as money will depend upon its capacity to meet these primary requirements and, as already observed, certain secondary requirements. In agricultural communities, where needs are simple and the products of different family groups include much that is similar, there are various agricultural commodities which might serve as money. In hunting communities skins have served that purpose, while the precious metals have been very generally used in this connection. The fact that metals can readily be cut into pieces which may, in turn, be reunited without loss, facilitates their use to adjust exchanges of very varying magnitude. The modern coinage system brings out this feature. Coins of the same metal are struck of very varying size, but it is necessary to deal with values the expression of which in one metal becomes inconvenient because the pieces of metal required would be unwieldy or, on the other hand, too minute. Another metal can be used for the expression of such extreme values. Thus silver coins may express the medium range of values, gold coins may be used for the larger values, and coins of a base metal, bronze, nickel, aluminium, or iron, may be used for the lower ranges of value. The device of coinage is no more than a device for saving trouble in testing the fineness and the weight of the piece of metal concerned. When a reliable authority has tested the quality of the metal and impressed on it a stamp indicating that fact and also showing, in accordance with well-known conventions, the quantity of metal contained in the stamped piece, users of these pieces of metal are saved much trouble and can adjust their transactions by counting pieces of metal without verifying chemically their purity or, by weighing, the quantity of metal in them. What is implied in this statement should be emphasised, namely, that the stamp upon a coin is primarily a means of guaranteeing the quantity and the quality of the metal contained in the stamped piece, not a means of conferring value upon the metal. Obviously it is important that the makers of coins should be able to be trusted, and that the coins when made should furnish some guarantee against mishandling by other persons—that is, it should be reasonably obvious if any portion of the original coin has been clipped off or rubbed away, or if the apparent homogeneity of the coin covers fraudulent dealing, as, for example, by the removal of a portion of its original material in order to replace it by something less valuable. If the nature of the material used, or the art of fabricating coins, be not capable of furnishing reasonable guarantees on these heads, the simplification of exchanges by the use of coins will be restricted.

Attention was directed above to the importance attaching to the service rendered by money in permitting of exchange of articles, even when the value to be disposed of differs from the value to be acquired. The balance, it was stated, could be expressed in money and handed over as money, this money being available for the purchase of any other article desired. If it be not used for immediate purchase, one of the secondary points in connection with money becomes of importance, namely, that it serves as a means of storing up value until required for use. In this function another desideratum in reference to the material selected for money becomes important, namely, that the values thus reserved should not seriously diminish during the period before they are applied. A commodity which loses value by mere keeping, however well suited it might be as a medium of exchange, and as something in terms of which other things might be expressed, would be ill qualified for serving the general purposes of money.

As commercial communities develop, at any rate beyond a certain stage, the importance of money as a means of measuring values grows relative to its importance as a medium of exchange. When commercial confidence is established, an acknowledgment of obligation to pay a sum of money may be acceptable and may enable an exchange to be effected without the actual use of the money itself. A very large proportion of the transactions of modern commercial societies are carried through in this way. Thus cheques or bills of exchange render unnecessary the handling of quantities of metal which would be inconvenient because unwieldy. They illustrate the fact that many holders of money are not holders because they need the money for immediate purposes, and are in no way inconvenienced by having, in place of the money itself, a legally recognised right to dispose of the money. On this the whole system of deposit banking is based, while the serviceability of a promise to pay in a large proportion of cases where actual payment might be demanded is also the foundation of the system of paper currency.

Whether as the actual medium of exchange or functioning in that capacity through representatives, such as cheques and notes, stability of value is of great importance in the material selected for use as money, and precious metals have owed much of their vogue as money to the relative stability of their values. This stability is connected in the main with the fact that, while in the case of the ordinary industrial metals the annual product which passes into consumption ceases to be available for new uses, in the case of the precious metals a large part of the annual supplies remain available for any specific use over a long period of years, if not indefinitely. There is, in some cases, a sacrifice of the results of artistic effort in melting down silver or gold which has taken the form of plate, but its recovery as metal is very much easier than in the case of iron or copper or lead, or most of the metals of this class. A direct result of this is that the accumulated stock of the precious metals grows steadily and becomes large in proportion to the annual new production. Fluctuations in the annual new production, or in the immediate demands for consumption purposes on that annual new supply, have, accordingly, a less disturbing effect on value in the case of silver and gold than in such cases as those of iron or lead. Combined with the general appreciation of these metals as the material for ornaments, these considerations lie at the base of their selection for monetary use. When used as money, it is true that, if not combined with other metals in alloys, the precious metals would suffer much from wear and tear, but they can be so combined as to produce a material which is resistant to wear and tear, particularly when it has undergone suitable mechanical treatment in the striking of coins.

It has been stated above that the use of promises to pay, in place of actual payment, is the basis of modern commercial banking. It is important to note that this development introduces a further economy in the mechanism of exchange, that is, it enables a large number of exchanges to be effected with relatively little actual money. A bank of deposit and discount receives from its clients sums entrusted to it for which it must account when called on. If the bank is able to meet every such demand, it is not essential that money thus deposited should remain dead in the hands of the bank. It is not, however, only because of the possibility of lending with perfect safety a portion of the deposits made that a bank facilitates exchanges, but because it entirely obviates the necessity for the use of actual money in a vast number of transactions. If two customers of the same bank are engaged in operations of purchase and sale, the transaction may be carried through, as between them, without any handling of actual money, by the passage of a document authorising the banker to credit one account and debit the other. Vast numbers of transactions are arranged in this way, and, even though the persons engaged in the business be not customers of the same bank, arrangements made between different banks suffice to preserve most of the economy to which attention is here directed. These arrangements may take the form of a systematic presentation by each bank at the offices of the other banks of the documents of claim handed in by their customers; and in the larger business communities the operation of mutual presentation of claims, and the cancellation of the great bulk of those claims, is organised still further by the creation of Clearing Houses as places at which, at regular times and in systematic fashion, the claims of each bank upon the others may be presented. How effective this system is in facilitating the carrying through of large transactions may be illustrated by the fact that in the year 1920 the London Clearing House alone dealt with claims aggregating £39,000,000,000 without the intervention of a single coin or piece of legal tender currency.

Organised systems of book-keeping thus, through the agencies of banks and clearing houses, enable money to be replaced in trade by promises to pay money, or by documents of authorisation to pay. In order that this credit device may be effective, it is essential that provision should be made for the actual payment of the money represented in the documents in question, should demand for payment be made. It is, therefore, necessary for those who are liable to be called upon to pay to hold in reserve such an amount of money as may be necessary to ensure their capacity to make payment. What that amount may be necessarily depends upon the character of the business transacted, and the practical experience of individual bankers must be depended on to determine the safe percentage of reserve. Some must keep more than others. As trade varies the amount required also varies, but it would be a grave error to deduce, from the fact that the proportion of the cash reserve to the credit transactions which it serves to facilitate is variable to some extent, the conclusion that credit is indefinitely extensible upon a given cash basis. The proportion of credit to reserve varies, but within limits and subject to conditions which experience enables the practical banker to appreciate.

There is also a large class of transactions in which the direct use of money is necessary, the habits of those concerned being such that a promise to pay is not equally acceptable with actual payment. In general, wages must be paid in money, and a large part of retail transactions, including the vast majority of the smaller transactions, require the use of actual money. However freely some classes of exchanges may be expanded or contracted without a corresponding variation of the actual money available, this is not true of all transactions, and especially not true of that class of transactions which represents the final exchange of a large part of the products of industry, namely, their acquisition by the ultimate consumers. High prices call for the use of more money in this field, and when prices are low less money is needed for the exchange of any determined quantity of commodities. The efficiency of money as an intermediary in exchange, that is, the quantity of goods that may be exchanged with a given quantity of money, is dependent upon another feature, generally referred to as the rapidity of circulation of money. Attention to this feature implies recognition of certain rather obvious facts. In some parts of the normal daily life of cities coins pass from hand to hand with great frequency, and the same coin serves to make many purchases in the course of a day. In the remoter and less active districts, money may be kept on the average for many days between any two transactions in which it is used. The circulation of money consists, in fact, of two phases—one, the existence of the money in the pockets or strong boxes of its owners as a reserve; and secondly, its spasmodic transference from the possession of one person into the possession of another. Whether the periods of rest are long relative to the periods of motion depends upon the habits of the persons concerned, but there may be substantial variation through changes in the disposition of those persons, and thus rapidity of circulation is not something which, when once determined, may be taken to measure a phenomenon constant from day to day, from month to month, and from place to place, but a varying factor influencing the efficiency of the money supply of a country with reference to the work of exchange to be done in that country.

## CHAPTER XII

## MONEY AND PRICES

THE relation between the supply of money and the general level of prices has been the subject of some conflict of opinion, and it will be well to examine somewhat closely the nature of the problem involved. Each operation of purchase or sale is not merely the acquisition, or the offer, of goods for money, but also the offer, or acquisition, of money in exchange for goods. If prices generally are on a high level the money obtained by the sellers of goods is correspondingly great in quantity, while if they are on a low level it will be in corresponding degree small in quantity. It is, therefore, obviously true that, in exchanges involving the actual passage of money from the buyer to the seller of goods, the quantity of money used will vary with the general level of prices. Now we have seen that in large groups of transactions in the modern business world it is not necessary that actual money should pass from buyer to seller of commodities, while, so far as concerns transactions of purchase where actual money does not pass, the level of prices appears, at any rate at first sight, to have no relation with the quantity of money in use. Though actual money does not pass in such transactions, a document conferring a claim to money does, in general, pass, and the form which such documents take is of importance in relation to the problem before us. They are of two main varieties, cheques and bills of exchange, which may be distinguished although the cheque is itself technically a bill of exchange. What we know as a cheque is an instruction to a banker by one of his clients to pay a specified sum of money to a named person, who may, if he wishes, collect the amount through an agent. The right to draw cheques implies the possession of a credit with the bankers upon whom the cheques are drawn. That credit may be based on the actual entrusting by the customer to the banker of money or immediate claims to money. It may, however, take its origin in an arrangement in virtue of which the customer acquires the right to draw upon the banker, within agreed limits, without the actual deposit of funds beforehand. The extent of the cheques which can be drawn is related to, and limited by, the extent of the credit accounts between customers and bankers. Though such accounts can be increased, as already remarked, without the actual deposit of money, the banker, in determining the aggregate amount of the advances which he accords to his customers, must have regard to his capacity to meet the resultant demands without default. His capacity to do so depends primarily upon the amount of actual money which he holds and the amount which, in the natural course of business, will accrue to his credit from day to day. The extent of his advances to customers is, accordingly, conditioned by the state of his reserves, and, taking the commercial community as a whole, it is true that the extent of the credit accommodation which bankers can extend to their customers as a whole is limited by the reserves in the possession of the banking community as a whole. It may also be affected by the distribution of these reserves between different bankers. As the aggregate of cheques which can be drawn is limited by the credits with bankers, and these credits are not indefinitely expansible without relation to the money resources of bankers, it follows that purchases which can be effected by the use of cheques without the actual handling of money in the narrower sense are limited in the last resort by the money supply. If this proposition be difficult to realise on account of the involved relations which have to be taken into account, it is possible to consider the problem from another point of view, namely, that the transactions of purchase and sale may be divided into two classes which are, in the main, clearly separable from one another. On the one hand, there are sales and purchases in connection with which actual money passes at each transaction; and, on the other hand, there are sales and purchases in connection with which documents representing claims to money suffice to effect the exchange. Into the former class fall the larger part of retail sales and purchases, and the latter class is mainly made up of wholesale transactions. Unless a change in the level of prices, or a change in the general money-supply, involves the transfer of transactions from the class in which money serves as the actual intermediary in the exchange to the other, the relations between money-supply and price-level can be considered in connection with the former class only of transactions. This course is justified by the further consideration that, though we may treat these two classes of transactions as separate from one another, the nominal price-levels expressing the rates of exchange of commodities in these two classes are not independent. It is not, in practice, except for comparatively short periods of time, possible for important changes to occur in the price-levels of one of the groups without the occurrence of corresponding changes in the other. For an examination of the problem before us we do not need to determine whether such changes take their origin in the one group or the other. It is sufficient that, in whichever group they arise, they are propagated into the other group. If this can be granted it will follow that the possibility of making provision for indefinite expansion of prices in the group of exchanges in which actual money does not pass will not justify the assertion that the movements of money-supply and prices are independent unless that independence can be established for the other group. As it has already been pointed out that in the group of transactions in which actual money serves as intermediary in exchanges a rising level of price implies a larger supply of money, and *vice versa*, unless the volume of transactions undergoes compensatory changes, a decreasing volume of transactions with an increasing price-level may be consistent with an unchanged money-supply, and an increased volume of exchanges with a lowered price-level may also be effected without change in the money-supply, while, as observed earlier, changes in the practice of the community covered by the designation "rapidity of circulation" or "efficiency" of money may be equivalent to corresponding changes in money-supply.

The volume of transactions and the general level of prices are not wholly independent. If prices are rising there is a tendency to business activity and an increasing number of purchases, so that in these circumstances the quantity of money required increases, both because of the larger amount necessary for the exchange of a given quantity of goods and because of the larger quantities of goods offered for exchange in such circumstances. Similarly, when prices are falling the activity of exchanges has some tendency to limitation, and the money required decreases, both by the lowered level of prices and by the decreased number of transactions calling for the use of money. Because of these considerations the movements upward and downward in the price-level in any community are not precisely proportionate to the varying money-supply, though this divergence is in part due to other causes as well.

Though the line of division between those classes of transactions in which actual money is needed and those in which representatives of money suffice is not rigid and permanent, its position at any given time is one of the factors in any problem involving the relation between money and prices. Its position changes as the economic development of the community proceeds. In general, the range of transactions in which representatives of money suffice tends to be enlarged, while that in which actual money is essential tends to become relatively smaller. These changes operate to render more efficient any given supply of money. While the modern line of development has been in the direction just indicated, there may, from time to time, be reversions to an earlier type and classes of transactions which for a time have been mainly handled by, for example, cheques, may need the use of legal tender money for a further period.

In the discussion in which we have been engaged the question of what is to be regarded as money has not been definitely faced, though a decision on the subject is implicit in various statements made. The precise significance to be given to the word money is, in fact, not of so great importance as the adhesion to the conception which may be formed of money throughout any argument on the subject. Whether the term money is used in a broader or a narrower sense will, for many purposes, be found of comparatively small importance provided that it is consistently used either narrowly or broadly, and not narrowly at one part of the argument and broadly at another part.

We are compelled to ask ourselves, therefore, what do we mean by money ? In the narrower sense it covers full-valued metallic coin only, that is to say, metallic coins, the stamp upon which declaring, in effect, their quality and weight, does no more than is implied by such a declaration. The gold coins of the United Kingdom before the war were such coins, having a value as metallic gold equal to that which they had as gold coins. Other varieties of coin, those of silver and bronze in this country, are treated as the equivalent in use as coins of defined fractions of the full-valued gold coins. Where such a mixed system exists, the regulation of the supply of the full-valued gold coins and of the representative coins is in general not on parallel lines. The representative coins being worth as metal less than they are worth as coins, the governments of the countries in which they are issued commonly reserve to themselves the right of issue, in order to secure for public purposes the difference between the cost of the coins and the face value shown upon them. To maintain them in circulation it is necessary that they should, in case of necessity, be exchangeable for full-valued coin in the proportion shown by their face value. This condition requires that the amount placed in circulation shall be limited by the convenience of the community and its needs for divisional money. If the amount placed in circulation exceed what it is convenient to use, and the issuing authorities are not prepared to accept at the face value any surplus of such divisional coins not required by the commercial situation, there is a tendency to establish two series of prices for commodities, the one the price paid in full-valued coin, the other the price required if payment is to be made in the representative coin What happens, in fact, is that the issuer of such coin cannot decree its value and at the same time issue it in unlimited quantities, and that if the amount, when placed in circulation, exceeds what it is necessary and convenient for the community to use in carrying out its everyday transactions, there tends to arise a discount on such superabundant representatives of money.

So far as concerns the full-valued coin, if mints are freely open to the use of citizens, then, when the metal of which the coin is made becomes worth less than the same amount of the same metal turned into coin, a pressure to convert metal into coin arises, and the supply of such coin consequently expands. If, on the other hand, the value of the coined metal fall below its value as metal, there is a tendency to withdraw the coin from circulation, melt it down and use it for non-monetary purposes. Viewed over a long period, if the metal of which full-valued coin is made fall in value, then the stimulus to production is decreased and the flow of supply affected. While it is true that mining equipment, once set up, may continue to be used when the results of the mining operations give little profit to the operators, it is to be remembered that the maintenance of most classes of mining operations requires a constant development of new workings, and that, if such operations become unprofitable, new workings will not be as freely opened out. On the other hand, if the value of the metal rise, its supply cannot be immediately expanded beyond somewhat narrow limits, since the expansion of supply means the creation of apparatus and works which may involve operations of a prolonged character. It is, nevertheless, true that if prices rise, that is to say, the value of coins falls, the industry of extracting the material of coins from the earth becomes less profitable and current supplies are reduced.

Just as the supply of full-valued money is supplemented, on the one hand, by supplies of coins made of a material which has less value uncoined than coined, in order to provide for exchanges of small value and for fractional adjustments in larger exchanges, so, on the other hand, provision has been made for obviating the use of inconveniently large quantities of metallic coin by employing paper representatives of such coin. We have already discussed briefly the cheque. What we are now concerned with is the currency-note or bank-note, or, to use a common phrase, paper money. We shall examine later the general conditions under which paper money has been issued in certain leading countries. It will be sufficient at present to note that, even in cases where the most careful provision has been made to enable the holders of paper money to obtain in exchange for their paper its nominal equivalent in full-valued coin, the quantity of paper placed in circulation exceeds in its face value the quantity of full-valued coin needed to ensure this condition of ready redemption. Only if there were a risk that the whole of the paper money outstanding would be presented for redemption at the same moment, would there be needed a metallic reserve equal in face value to the aggregate of such paper money in use. The use of paper currency thus either sets free for other purposes the metal which is the material of full-valued coin, or involves the increase of the quantity of monetary instruments in circulation. This increase is especially likely to take place in conditions in which the redemption of paper currency at its nominal equivalent in full-valued coin is not legally insisted on or practically maintained. The responsibility of issuers to redeem at face value any paper presented restrains them from putting into circulation an unlimited amount of paper currency. Where that responsibility is not insisted upon legally or practically, the issuers of the paper currency are more or less free from this restraint and the quantity, by which is meant the aggregate face value, of the notes in circulation, may increase to a dangerous extent.

In order to be quite clear in the use of terms, let us here review some of those actually employed or immediately to be employed. We have dealt with full-valued coin, and it has been explained that such coin contains metal having a value in the market, simply as metal, equal to that represented by the face value of the coin. Alongside full-valued coin we have representative coin, divisional money. The legislative provisions which entitle anyone to require the acceptance, in payment of sums due, of specified full-valued coins do, in reality, no more than to recognise the value of those coins. They are made legal tender, but their own value would ensure for them free circulation without that support of a legal recognition. The same is not the case with reference to representative coins. In this case it is usual that such coins should be assigned the power of legal tender only to a limited extent, that is to say, that it is not open to any person to require the acceptance, in payment of any sum due, of such amounts of the over-valued coin as he may care to offer. In England the silver coinage is legal tender only to the extent of forty shillings in one payment, while the bronze coinage is legal tender only to the extent of one shilling at a time. No one is prohibited from accepting larger sums as full payment in the form of bronze or silver currency, but these limitations impose an obstacle on the operations of the makers of false coin. They are unable to put into circulation, except in retail fashion, the products of their dexterity. The quality of legal tender assigned to coin enables the tender of such coin to fulfil a legal obligation to pay. A similar statement is rue with reference to paper currency. In order that it may be freely accepted the recipient of it must be confident that he will be able to obtain for it values corresponding to those expressed upon its face. While such a confidence may arise through the trust placed by some members of the community in other members of the community, and does, in fact, enable cheques to be used with considerable freedom in making payment still, for general purposes of miscellaneous trade, something more than this is commonly necessary. The assurance required is provided where the quality of legal tender is conferred upon paper, that is to say, where the offer of such paper in payment of sums due ensures the person offering it against legal proceedings to recover after such an offer has been made. Where the quality of legal tender has been conferred upon paper currency, the provision of a reserve of full-valued coin, and the maintenance of a system of current redemption in such coin at the face value of the notes, is not essential to ensure their free circulation. The recipient is assured that he will, in his turn, be able to use the notes in making payment, and therefore he feels no hesitation in accepting them in payment to himself. It is to be observed, however, that the quality of legal tender is not a necessary condition of free circulation. There are abundant illustrations of the circulation by banks of promissory notes at their full face value, that circulation being based on the trust reposed by the members of the community generally in the issuer and the confident belief that, if required, the value represented on their face would be able to be obtained.

## CHAPTER XIII

# HIGH AND LOW PRICES—THEIR ECONOMIC AND SOCIAL EFFECTS

WHETHER the general price-level prevailing in a country be the result of the volume of its monetary circulation, or the inverse relation represent the facts, it is of great importance to consider the relation of high prices or low prices to economic progress and social welfare. It may be said without detailed argument that, provided prices remain steady, whether they be high or whether they be low is of, at best, secondary importance. In relation to trade with other communities the price-level has, it is true, great importance, and the questions depending upon the comparative price-levels in different communities will come up for consideration in due course. Within any one community, however, the expression of prices by means of large numbers or by means of small is, in the main, a question of the choice of the monetary unit. Relative values are not altered by the expression of each individual value in larger numbers, and the relative position of the different members of the community would not be changed if every price were, say, multiplied by ten, the resources, whether accumulated or currently accruing, of each individual in the community being simultaneously increased in the same proportion.

While, however, the question of a high level or a low level of prices, apart from its effect on external trade, is a question of little moment, the transition from a low level of prices to a high level, or from a high level to a low level, may have effects of far-reaching importance. The relative economic status and welfare of different members of the community will not remain unchanged in such a process of transition from one level of prices to another.

First among the reasons for such changes stands the fact that, in modern civilised communities, there has grown up a complicated network of relationships between different persons owing to the practice of lending and borrowing, and the practice of contracting ahead in adjusting business plans. In such communities a considerable proportion of the productive enterprises are carried on to a substantial extent by means of borrowed resources. The nominal owner of such enterprises, who is responsible for their conduct, commonly prefers to supplement his own resources by associating with himself other persons who may have no desire to share in the risks and tasks of management. Such borrowed resources involve on the part of the borrower an undertaking to pay annually or at other fixed intervals certain agreed sums of money, interest on debentures, dividend on preference capital and the like, or interest on a banker's advance. From the point of view of a manufacturer, money means, on the one hand, the power to secure equipment and materials and to pay wages in the manufacturing enterprise; on the other, it means the price secured for the manufactured product when sold. If prices generally fall after the principal expenses of establishing such an enterprise have been incurred, the anticipation of profitable manufacture may be destroyed, though the technical competence of the management is not deficient. If, for example, of the sale value of a given class of manufactures, 40 per cent. is needed to pay for materials, 30 per cent. for wages, 15 per cent. for other charges, there will remain 15 per cent. for the proprietors, including interest on borrowed capital. If after the purchase of the material and the making of arrangements for the hire of labour and other payments there be a movement in general prices, as a consequence of which the value of the manufactured product is reduced by 5 per cent., it is upon the last 15 per cent. that the burden of this reduction falls in the first place, and the 15 per cent. is itself subject to fixed charges for interest. Such a fall in prices as here imagined may, in fact, destroy the prospect of net profit to the manufacturer and will, in any case, seriously trench upon such profit. Unless it be possible to make such arrangements with respect to the purchase of materials and the payment of labour, etc., as will permit of the transfer, to the sellers of those goods or services, of a part, if not the whole, of the percentage fall in prices, manufacturing enterprise of the class considered will be clearly discouraged. It will, in any case, suffer some discouragement, since some part of the charges upon the business are predetermined beyond any possibility of readjustment in keeping with a fall in prices. This is one side of the effect of falling prices. On the other side we have the position of the lender of capital and other persons having charges upon the business fixed in terms of money. These, in so far as they receive their fixed contract payments in money, are, as a result of a fall in prices, more favourably situated than previously, since they receive the same sum in money and each unit of money gives them command over more goods. Thus, in a period of falling prices, lenders benefit and borrowers suffer disadvantage. Borrowing is thus discouraged as effectively, at least, as if the rate charged to borrowers were increased. The disadvantage of borrowers, so far as they are borrowers who desire to anticipate the spending of resources not yet under their control, such spending being for personal gratification, need not seriously concern us ; but the class of borrowers includes a very large part, indeed, practically the whole of the manufacturing and trading sections of the community, since it is a very general practice to carry on business on a larger scale than can be done by means of such resources as are the exclusive property of the manager of the business in question.

While the discouraging effect upon enterprise which follows from a falling trend in prices is readily recognised, there is another side even to this problem which should not be allowed to pass wholly unnoticed. A corresponding argument to that which has just been set out will show that, in a period of rising prices, the owners of business enterprises stand to gain larger amounts than they have contracted for. In such circumstances an incompetent management may be protected from its normal consequence of business loss. When prices are falling, however, it requires something more than average competence to overcome the handicap of fixed charges. The struggle against difficulties calls out the full competence of the better managers and forces upon them the consideration of means to increase the efficiency of their businesses which might have been allowed to pass unutilised in a period of rising prices. A period of falling prices, therefore, tends to drive out of business persons below the average in capacity, and some even above the average, while periods of rising prices tend to permit of the retention of business control in the hands of some persons who could not hold their own in a period even of steady prices, much less of falling prices.

While, therefore, rising prices encourage, and falling prices discourage, business enterprise, falling prices have a tendency to raise the level of competence and of energetic effort in the businesses affected, by weeding out those relatively less competent or less energetic. The rate at which prices rise or fall may be of considerable importance in this connection. Rapidly rising prices may encourage the intrusion into business of persons ill-equipped with technical knowledge and experience and thus lower the standard of management, while management secures an increasing share in the total proceeds of the business. If the possession of technical qualifications is not associated with a temper leading its owner to fight doggedly and energetically against misfortune, rapidly falling prices will so discourage enterprise as to limit business in a serious, possibly in a dangerous, degree. The general conclusion of thinkers on this subject is that if it were possible to choose deliberately between rising, steady, or falling prices, steady prices would be chosen, or, if that ideal cannot be attained, then very slowly falling prices are to be preferred on the whole to any other movement. There are some, however, who would choose slowly rising rather than slowly falling prices, believing that the community gains more by attracting a larger volume of enterprise into business than by driving the less competent out of business, whatever corresponding stimulus may be experienced by the more competent survivors.

Let us turn to another aspect of the effects of the changed price-level. Among the arrangements which business managers need to make in planning for the future, the hire of labour and the payment of wages takes a prominent place. If prices are falling generally and wages are protected from a fall, the effects upon the managers of business are such as have already been considered; the effects upon the recipient of wages are also similar to those which have been considered with reference to the lender of capital in similar circumstances. The wage-earner receiving an agreed sum of money finds himself in a position to purchase larger supplies of the commodities he needs, or to purchase his normal supplies and to retain, for any purposes outside the normal range of expenditure, whatever margin may result from a fall of prices. That margin may, of course, be saved, so that the wage-earner becomes to that extent a capitalist. Should prices move in the opposite direction, inverse effects will result in a manner similar to that already considered. The wage-earner's command over the necessities and comforts of life is reduced by rising prices, and if he has had a margin for saving that margin is decreased; if he has had no margin or too narrow a margin, his efficiency is threatened unless some readjustment of expenditure be possible so as to maintain efficiency on a smaller outlay, and, in any case, discontent results Rising or falling prices, indeed, may be, and often are, the causes of industrial disputes, since wage-earners will not readily concede an employer's proposal that money wages should fall when the prices of the goods manufactured fall, while, if prices generally are rising, wage-earners will endeavour to enforce a claim for increased money wages even though the particular products which they manufacture do not share, or do not share fully, in the general upward movement of prices.

In the long period from the early '70's to the middle '90's of the last century the general tendency of prices was downward. There was much complaint of depression of trade, complaint which was only intermittently removed by short bursts of prosperity accompanied by temporary interruptions of the downward movement of prices. Thus about 1883 and about 1890 there were recoveries in prices and increased activity in business, interrupting the general downward trend from 1873 to 1895 and the almost unbroken lamentations regarding the dullness of business. This period was, however, a period during which considerable industrial advance was made, the rapidity of the price fall not being so great as to remove all inducement to enterprise. It was succeeded by a period, extending nearly to the outbreak of war, when prices on the whole trended upwards. There were interruptions in that upward trend. For example, in 1901 and in 1907–8 such interruptions occurred. During such a period the efforts of wage-earners to better their position by striking a better bargain with employers with reference to the division of the joint product encounter obstacles of a different character from those met during a period of falling prices. In such a period the task of labour is to resist alteration. In a period of rising prices labour must, if it is even to maintain its position, secure an alteration of standing rates of payment. In actual practice, both on the down grade and on the up grade, wages tend to lag behind prices, and accordingly, in periods of falling prices, the position of the wage-earning classes relative to that of other classes of the community improves, while, broadly speaking, it is only with difficulty that, in a period of rising prices, that relative position can be maintained. Viewed broadly, accordingly, the interest of the wage-earning classes would appear to be on the side of falling prices and distinctly opposed to rising prices. Only in the degree in which the prospects of profits during periods of rising prices incline employers to compete with one another and overbid one another for the services of wage-earners, will such rising prices tend to the advantage of the latter. On the other hand, a falling scale of prices, to the extent to which it discourages enterprise, will narrow the field of employment of labour and be contrary to the broader interests of the wage-earning classes.

We have reviewed the position of two important sections of the community as affected by changing price-levels. Such other groups as may need consideration have a close relation to those already passed under review. Thus the class whose incomes expressed in money are fixed, or are capable, at best, of only slow alteration, have a good deal in common with the lending class on the one hand, and the wage-earning class on the other. To some considerable extent, indeed, persons in receipt of fixed incomes will be deriving those incomes from investments, that is to say, from the lending of money at fixed rates. Those whose incomes do not readily respond to changing price levels, where, for example, they are derived from personal services rendered, hold a position closely analogous, on the whole, to that of the wage-earners, and little new can be said of the one class which does not apply to the other. There is one other group of considerations which should not be omitted in this connection, affecting as they do the relations of manufacturers, merchants, and consumers. As has been already recalled, processes of production are extended over considerable periods, and contracts for supply are made well in advance of the date when the supply is to be delivered. Many, if not most, of the expenses incurred in production are incurred in advance. When prices, for example, of materials are falling there may be possibilities that certain producers, living from hand to mouth, can deliver goods in a shorter period from the purchase of materials than the well-established full-scale producers, who normally and prudently make provision for a considerable period ahead. Where this special class of producers exists they may place upon the market products which, if sold on the same terms as those of the more well-established firms, give them an unusual profit because of the late date at which they purchased their materials. In order to sell their goods they may offer them on more favourable terms than rule in the market, without sacrificing an ordinary rate of profit. The presence of such competitors hastens the transmission of a fall in prices from one stage in production to another, from raw materials to manufactured products, and the corresponding situation may arise with reference to the distribution of products and the relation of retail prices to wholesale prices. Merchant firms which carry large stocks will, if they are free to choose their own course, be slow to adjust their selling prices to the fall in the prices at which they buy, since such an adjustment would mean a definite loss. In a period of rising prices it is the businesses which make the fullest provision for the future that are most favourably placed. During such a period the firms less well provided ahead will be compelled either to raise prices or to withdraw from business, and, if the situation permits of their remaining in business, the rising price of materials will be rapidly transmitted to the goods manufactured from them, or rising prices in wholesale markets will be speedily reflected in the retail markets. Meanwhile, firms well provided with stocks bought at a lower level of price will secure a rate of profit greater than contemplated, a rate possibly exceeding that which they would regard as fully adequate to justify their continuance in business.

Reference in passing should be made to the special difficulty of adjusting some classes of charges to a general changed price-level. Postal charges, telegraph charges, tram fares, railway fares, newspaper prices, and other charges of this class are fixed at conventional levels, and the alteration of the conventional charge is not readily made. When it is made it is equally difficult to revert to the old charges should the course of prices alter and the former range be again approached. Those whose interests are bound up in either paying or receiving such conventional fixed charges are obviously advantaged or disadvantaged, respectively, in a period of rising prices, and conversely in a period of falling prices. Thus a cab fare of one shilling for two miles in 1913 represented, relatively, a smaller outlay to payers of the fare, if of the same social grade, than in 1895, while, on the other hand, it represented a relatively smaller return to the cab driver at the later date. The experience of the last generation has shown both the difficulty of altering many of these charges when changes in prices proceed slowly, and the fact that, when changes proceed sufficiently violently, tradition in regard to such charges can be and is overcome.

The important point to notice in considering these various consequences of rising and falling prices is that they involve fundamental changes in the relative position of large social classes. In the course of the readjustments consequent on a violent change upwards or downwards, the proportions between wages, interest, and management charges undergo alteration. With prices rising, fixed interest charges absorb a smaller fraction of the total product. Wages and management have, accordingly, a larger share to divide between them. The precise effects, on the share of the total product taken by wages, of any series of changes in the general price-level are worthy of very careful study, the more so as secondary effects of grave importance to the progress of the community may flow from them. It is not altogether a matter of indifference, even if the persons concerned be content with changed arrangements, what sections of the community have the largest control over its current resources. With a given division as between wages and other charges, for example, the total amount which is converted into capital, that is to say, into goods forming the equipment for future production and enabling a more effective organisation of that production, may be larger than with a different division between these classes. In view of the importance of an adequate supply of new capital for the development of the community's power of production, the transfer of a larger share in the available goods to or from classes in which the disposition to save is strong, will produce effects of vital moment; and if these transfers occur, as they may, in consequence of changes in the general price-level, then these changes affect, not merely the immediate interest of one class or the other class, but the future position of the community as a producing organisation. If, therefore, changes in the general level of prices be the consequence of the financial policy of governments, especially in relation to the regulation of the currency, those policies need to be examined with great attention in order that unforeseen evil may not result from an insufficient appreciation of the importance of currency supply in the development of the State.

In view of the experience of some countries whose currencies have greatly depreciated since the war, attention may also be given to another way in which the interests of the whole community, as related to the accumulation of new capital, are affected by changes in the general price-level. It would be more correct to say, not that such changes in themselves, but rather that the anticipation of changes, particularly the anticipation of violent changes, which is aroused by actual experience of such movements, yields the consequences now to be considered. To many, saving takes the form of the accumulation of money, of a bank credit, or of trustworthy securities bearing fixed rates of interest. A rapid rise of prices, by its effects in depreciating the value of such savings, discourages their accumulation. Immediate expenditure of available money, if not in the indulgence of unimportant or injurious desires, at least in the acquisition of goods adapted for direct personal use, commends itself as preferable to accumulation of money or of simple claims to money. Capital goods, to serve as the means of industrial expansion, are, in such circumstances, accumulated in smaller quantity than the resources of the community might readily ensure. On the other hand, a very rapid fall of prices, exaggerating effects already considered, by the discouragement of enterprise which it causes, leads to a restriction of the resources from which an accumulation of capital might be drawn.

## CHAPTER XIV

## THE SUPPLY OF MONEY

WITH regard to the metallic part of the currency of modern commercial countries, the supply is effected through the agency of a Government department or undertaking. Such metallic money consists in part of full-valued coins, in part of other coins which, for monetary purposes, represent values greater than those of the metal of which they are made. Thus the English coinage system consists of bronze coins for small payments, an avoirdupois pound of which represents four shillings at the face value of the coins ; silver coins for purposes of payments where the bronze coinage would be inconvenient by its weight ; and gold coins, the half-sovereign and the sovereign. The silver coins were, prior to 1921, made of an alloy of silver thirty-seven-fortieths fine, and an ounce Troy of such coin had a face value of 5s. 6d. In 1921 an alloy of inferior value was used containing 40 per cent. of alloy, principally nickel, the weight and size of the coins, as well as their denomination, being preserved. The gold coin, the theoretic though not the practical basis of our values, is made of a gold alloy eleven-twelfths fine, this degree of purity being rarely found in other countries where the nine-tenths proportion generally prevails both for gold and for silver coins.

The quantity of gold in a sovereign may be expressed in several different ways. One way is to say that from 40 pounds Troy of standard gold 1869 sovereigns are fabricated. Another way is to say that the gold coin is struck at a value of £3, 17s. 10½d. per ounce, while the same facts can be expressed by stating the weight of the sovereign as 123·27447 grains Each country has its own system of coins, though the group of countries known as the Latin Union have coins identical in all respects, except in the names by which they are known and in the particular inscriptions upon them. France, Belgium, Switzerland, Italy, Spain, and Greece have thus the same units, and Bulgaria and Finland have monetary units identical with those of the Latin Union. In a similar way the coins of Denmark, Norway, and Sweden are identical in weight and purity for each denomination. The interchange, between the different countries of such monetary unions, of the coins struck by each country for its own use, was formerly an important feature of the international monetary arrangements. The great disturbance of values arising out of and following on the war has, however, rendered these interchanges of coins inconvenient and, indeed, embarrassing, and the present position is that the field of circulation of each country's coins is the territory of that country itself.

The correspondence of the value of the sovereign with the value of the gold contained in it was formerly maintained by the fact that the mints of the country were freely opened to all who wished to procure gold coins for gold bullion, and the export of gold, whether in the shape of gold or of bullion, was unhindered. When abundant supplies of gold reached this country there was thus a tendency for their conversion into coin, while if, for any reason, it became expedient to withdraw gold from circulation and ship it abroad this course could be followed, so that gold as coin and gold as bullion could not differ in value by more than the equivalent of the average wear and tear experienced by coin actually in circulation. Naturally the holder of gold will not take less for it from others than the equivalent of the coin into which the mint would convert it on his account, while a buyer of gold will not give a higher price than corresponds to the cost of collecting and melting current gold coins. There was before the war a constant flow between the gold currency and bullion stocks. This interchange, so far as this country is concerned, has been interrupted, and the face value of any given quantity of gold coin no longer corresponds to the market value of that coin regarded as gold metal simply.

When the mints are open for the coinage of metal owned by private citizens, it is not necessarily the case that the State manufactures the coin free of charge to the citizen. In some countries a charge for the striking of the coins, known as "brassage," is made; in others, as formerly in Great Britain, no charge for manufacture of coins is made by the official mint, the holder of bullion having merely to wait his turn with other applicants, that is to say, being liable to some delay but not required to pay any charges except for the assay of the bullion. Coin, or other money, at the rate of £3, 17s. 9d. per ounce of standard gold, could be always obtained from the Bank of England by holders of gold who preferred this course instead of presenting the metal at the Mint on their own account.

While, in those countries in which open mints for the coinage of gold exist, the supply of the gold coinage is left to the operation of natural causes, such a course is nowhere attempted for subsidiary coinage, the metal in which is overvalued in the coin. Our silver and bronze coin is supplied by the Government in response to public demand, and provision is made for the withdrawal of coin and its redemption on behalf of the Government. The volume of the gold currency as it was before the war was thus dependent on the supply of gold from the gold mines and the competition between our own and other countries for possession of available supplies. The supply of silver and bronze currency was, however, adjusted to the requirements for such currency for use as small change. Similar principles apply still in those countries in which gold remains freely exchangeable against other forms of currency, as in the United States and in Japan. In the United Kingdom gold has practically disappeared from circulation, and its place has been taken by Treasury Notes representing those denominations most familiar in the days of the gold currency, the pound and the half of that value.

These Treasury Notes have had conferred upon them legal tender power, a quality which was defined earlier and which enables them to circulate freely from holder to holder. The amount in circulation is regulated by the responsible Government department in accordance with the demands of the commercial community expressed through the banks. The Treasury Note is frankly not a promise by the Treasury to pay a sum of money, it is simply a representative of a certain sum, and the quantity of such representatives of money issued is only limited by the restriction imposed in 1920 that the maximum of the fiduciary issue in any year shall not exceed a prescribed limit, the limit being so arranged as to fall year by year. The issuing authorities held in August 1922, as backing for the notes issued, a sum of £27,000,000 in gold, Bank of England notes of a face value of £21,150,000, a sum of £7,000,000 in silver coin, and, beyond these, Government securities for the balance of outstanding notes. Thus an interest-bearing Government security is converted into an effective circulating medium; the actual notes in circulation, however, bearing no interest, though part of the security held against them does bear interest.

The Treasury Notes have been introduced since 1914 to supplement the then existing paper currency of the United Kingdom. That paper currency consisted in England and Wales of notes issued by the Bank of England; in Scotland and in Ireland it consisted of notes issued by certain banks of old standing which held the privilege of note issue. The Bank of England was not, until very recently, the sole issuer of bank-notes in England and Wales. The other banks which exercised the privilege of issue have steadily decreased for many years, and the last of such issuing rights ceased to exist in April 1921. The private right of note-issue was the survival of an arrangement made at the time of the passage of the Peel Bank Act in 1844. At that time the concentration of issues in the hands of the Bank of England was aimed at, there being then numerous joint-stock and private banks issuing notes for local circulation in their respective neighbourhoods. Such notes rarely enjoyed more than local circulation, and the growing facilities of intercommunication between different parts of the country have steadily operated to diminish the value of this right of circulation. The concentration of banking power by means of the amalgamation of different banks and the absorption of small banks by larger banks has brought about the diminution, since a bank possessing the right of issue lost that right when it lost its individual existence through absorption or amalgamation. The banks, other than the Bank of England, which issued bank-notes issued them without legal limitation of the funds available for their redemption, using their discretion as to means of ensuring ability to pay legal tender money for any notes presented. The only limitations to which they were subject were that their issues could never exceed amounts prescribed for each of them in the Act of 1844. The Bank of England had a more elastic system, as an indefinite right of issue was accorded to it, subject only to the condition that, for all issues over a certain prescribed limit, an exactly equivalent sum in gold should be held by the Bank. This limit now stands at £18,450,000, having increased to that figure from the original figure of £14,000,000, by the transfer to the Bank of England of a proportion of the lapsed rights of issue of other banks in England and Wales. The Bank of England note-issue thus fluctuates, apart from the fiduciary issue of £18,450,000, exactly as a currency of metallic gold would fluctuate. The Bank of England note is, in fact, a deposit receipt for gold, used as more convenient than the gold itself. The limit of £18,450,000 is a limit below which it has for long been extremely improbable that the circulation would at any time fall, so that the absence of actual gold to that amount does not endanger in practice the Bank's capacity to give gold for all notes presented. The security held against the fiduciary issue consists of certain Government loans, partly a book debt, partly other forms of Government indebtedness, such as Consols.

Prior to the war the whole interest of paper currency in England and Wales was limited to Bank of England notes. More recently, Treasury Notes have become the dominant element in the paper currency. In other countries also, paper currency has replaced coin to a very large extent even where gold coin was formerly in active circulation. In many countries there was already a well-developed habit of use of paper currency, contrasting with the prejudice in England against paper of smaller denominations than £5. In general, the expansion of such paper currency has involved the abandonment of the older legal limitations, which had been imposed with a view to restrain the improper use of the privilege of issue. A very brief reference to the principal types of limitation will accordingly be quite sufficient.

The type illustrated by the Bank of England has been adopted in a number of countries with more or less modification, that is to say, a certain issue guaranteed by securities, and further issues unlimited so long as the excess is covered by gold either in the shape of coin or bullion. In some cases the stipulation that the gold should be actually in hand is modified by the acceptance of balances at foreign centres, or other rights of payment at places abroad, where gold was readily obtainable in payment. It should be noted that such foreign balances, etc., serve admirably the purpose of maintaining a cash supply, since it would frequently be the case that the holder of bank-notes desired cash for the purpose of foreign payments, and would therefore be conveniently accommodated if offered a right of payment abroad in place of a sum in metal, the transmission of which would involve some trouble and expense.

Either in combination with the fixed fiduciary issue, or as a separate and distinct limitation upon issues, some countries prescribe that a fixed fraction of the outstanding paper currency shall be represented by gold in hand. This method enables a paper currency to be expanded more readily than when paper can only be obtained in exchange for gold deposited to an equal nominal amount, but presents some difficulties when reduction of the circulation is in question. To furnish a means of meeting a seasonal exceptional demand for paper currency an additional relaxation of the fixed fiduciary issue, ordinarily acting in restraint of expansion, has sometimes been allowed, as, for example, formerly in connection with the issue of the German Reichsbank. In that case an excess issue was allowed, subject to a special tax proportioned to the excess, the payment of which weekly acted as a constant inducement to withdraw the excess issue as soon as it was no longer essential. Mixed systems of regulation are found in some cases, as, for example, in the Dominion of Canada. In this case there is an issue by the Dominion Government on the principles of the Bank of England issue, and alongside, and having concurrent circulation with, this Government issue, an issue by a number of privileged banks, the " chartered banks." These banks had the right of issue up to the amount of their paid-up and unimpaired capital, which limit has in recent years been extended by the inclusion of accumulated reserve funds as well as capital in the figure expressing the limit of issue of each bank, while during the active crop-moving season a further expansion by a limited percentage is permitted, subject to special tax. No legislative provision limits the amount of the reserves which the chartered banks must hold for the security of their note-issues. The requirement that they should be paid on demand in a named city in each of the provinces of the Dominion has sufficed to ensure their free acceptance throughout the Dominion. It is clearly not to the interest of any of the banks that the notes of other banks should circulate rather than their own, and this leads to a constant presentation of notes for redemption, ensuring that any excess in actual circulation is presented to the issuer without delay. The discretion allowed to the Canadian chartered banks in reference to the provision made for redeeming the notes which they are allowed to issue parallels that allowed the Banque de France. This, the sole note-issuing authority (apart from the small notes issued by Chambers of Commerce and other authorities in recent years to meet the lack of small change), has the privilege of issue up to a prescribed total. That total has, in practice, been expanded when the situation caused the actual issues to approach near the prescribed maximum limit. Except for the maximum limit, the Banque de France is left free to regulate at its own discretion the quantities and denominations of notes issued and the provision made for their redemption on presentation.

The nominal provisions of former laws with reference to the redemption in coin of bank-note or Government-issued currency are of little further present interest than as illustrations of the varying methods employed to ensure the free circulation and ready redemption of notes on the one hand, and to impose a restraint against undue expansion of issues on the other. The needs of the war period have led to the ignoring, in practice if not in form, of any restrictions which prevented abundant issues of paper currency to support the plans of the various governments in every European country, and in some others paper currency has increased considerably in volume under the pressure of war necessities. Where governments have found it difficult to meet the charges falling upon them by increased taxation or by the ordinary forms of borrowing, they have, in many cases, had recourse to the power of note-issue to replenish their coffers, and have paid the sums which it became necessary to pay in the course of their operations by additional issues of paper currency. In some cases these issues have not been made directly by the Government, but where they have been made by a bank, the privilege of making them being the compensation to the bank for making advances of corresponding or more than corresponding magnitude to the Government, the fact that the actual issuer was not the Government itself is of relatively small importance in determining the responsibility for the enlarged issues.

While the principal countries of Western Europe formerly regulated the volume of their currencies by the supplies of gold available from gold mines, creating such amounts of such subsidiary currency or of bank-notes as might be convenient substitutes for gold in certain of its exchange operations, the later history of the war is a history of a period where the customary restraints on the expansion of currency were abandoned. The effect of the abandonment of the old limitations has been a largely increased use of paper currency everywhere and a very great abuse of the power of issue in some countries. By its effect in ensuring the maintenance of a higher level of prices than would otherwise obtain, the creation of such additional paper currency ensures the depreciation of existing money resources and revenues in the country concerned, and results in the appropriation, for the purposes of the creators of the new currency, of a portion of those resources and revenues. The expansion of the currency has thus an effect resembling that of a tax on such resources and revenues.

Alongside coin and paper money there are used a considerable and variable amount of other media of exchange having different characteristics from those of the bank note proper. A cheque or a bill of exchange can serve as a means of payment between two persons who agree to offer and to accept, respectively, such documents. In the hands of strangers they are of but little use, while paper currency serves as an instrument of exchange even between complete strangers. In some communities a very large use is made of cheques and of bills of exchange in payment for goods purchased, and, in considering the volumes of the currency of such countries at any time, it is not sufficient to take account of the coin in circulation and of the bank or government notes outstanding, but attention must also be given to the extent to which cheques can be drawn for the purpose of making payments. An indication of this extent is afforded by the total amount of the deposit accounts standing to the credit of customers in the various banks. This figure taken by itself does not, however, express the power to draw cheques possessed by the community. Apart from the fact that, as a matter of convenience in settling their mutual relations, the banks maintain deposit accounts between themselves and one or more of their number, there is the consideration that the total of deposit accounts includes accounts due only at fixed periods or after fixed terms of notice, and therefore not liable to be drawn upon at once; while, on the other hand, there are arrangements between bankers and clients which enable the client to draw within a maximum arranged with the banker, though no corresponding sum is included as an item in a deposit account. It is important, however, to bear in mind that, alongside the known quantity of outstanding bank-notes, we have to take into account a right to create documents usable, for purposes of payment, almost as freely as bank-notes in some communities, documents which may be created within limits roughly indicated by the deposit totals of the banks of the community.

## CHAPTER XV

# THE RELATIVE VALUES OF DIFFERENT CURRENCIES

IN the preceding chapter the general conditions affecting the supply of currency in the principal countries of the world were passed in review. In each country the need for currency and the supply of currency results in the establishment of a scale of prices based upon which the productive and mercantile activities of the community are developed. A problem of great importance now to be considered is the relation between prices in one currency in one country and prices in another currency in a second country.

As with other exchangeable goods, the right to receive in a given country a definite amount of its currency has, in any other country, a value determined by the conditions of supply of and demand for such rights. In international payments the characteristic instrument of exchange is a document known as a bill of exchange, which confers upon its owner the right to receive, under circumstances specified in the document, a sum of money whose amount is stated. The simplest form of the bill of exchange is a cheque, and, in international payments, drafts by banks upon their correspondents in other countries play an important part. Some of these have the ordinary simple form of the cheque, familiar in our domestic commerce. The problem before us is, then, to consider the principles on which the value in one country of a bill drawn upon a second country, and expressed in terms of the currency of the second country, is determined. We must, therefore, consider what are the principal conditions affecting the supply of and demand for such bills or drafts.

The principal, and in normal circumstances the most important, item on either side of the account relates to purchase and sale of goods as between the countries concerned. When goods are exported from one country to another, payment for the goods may be secured in the first country in either of two ways: either the account is "drawn for," that is to say, a claim for payment in the importing country is created in documentary form; or a remittance, in the form of a title to funds payable in the exporting country, is sent in payment. In the former case, we have a supply of the currency of the second (the importing) country available for sale in the first (the exporting) country; in the second case, we have in the second country a demand, for purposes of remittance, for currency of the first country As exports from one country to another are imports to the second from the first, what has been said of exports applies also in the case of imports, and the principles governing both sides of the transaction have already been indicated. For convenience of statement of the problem, but not because of the special appropriateness of either form of securing payment, it will be desirable to use language implying that the usual course of payment is either the one or the other of those indicated above. It is, strictly speaking, a matter of indifference which of the two simplifying hypotheses is made, so that, in selecting as the hypothesis that bills are drawn against exports, and are purchased for remittance in payment for imports, we are not implying that this course is either more general or theoretically more desirable than the other. It is simply that the framing of statements which in every case cover a payment partly in the one form and partly in the other, makes those statements inconveniently complicated.

So far as interchange of goods is concerned then, there is, in respect of exports, a supply of drafts on the importing country, and in respect of imports there is a demand for drafts on the exporting country. If we are considering two countries only, the exporters from either country will be sellers of documents which importers to that country desire to buy; the documents will in general be expressed in the currency of the foreign country; they will be bought and sold in the terms of the currency of the home country. If such documents arose only in connection with import and export of merchandise, then the relation of supply to demand would be the relation of export to import, and a balance of supply and demand would be attained if, and only if, there were a balance between import and export. In actual practice, however, there are numerous other sources of demand for and supply of such drafts.

Even with reference to exchange of merchandise only, the conditions of payment affect the balance of the market for bills; thus there may be a choice between immediate payment and deferred payment, and the volume of demand for, or of supply of, drafts for immediate payment may be modified by such deferment. The advantage or disadvantage of deferment will have relation, among other things, to the loan value of money and to the conditions which may have to be conceded for deferred payment; in fact, an immediate balance of payments due, if it threatens an unfavourable disturbance of the value relations of the two currencies, may be modified by resort to deferred payment of part of the amounts currently exigible. Such deferment of payment is, in effect, a borrowing by the person from whom payment is due from the person to whom the payment is due, and forms a special case of a large class of transactions important with reference to international payments. It is usual to treat money loans for defined terms as the most characteristic example of international lending; it is at least possible that the variation of the terms of payment of commercial bills may be not less important, in its effect on the exchange market, than the formal negotiation of public or private loans.

Looking at the matter, however, from the point of view of a loan as a financial transaction, and its effect on the market for exchange as based on mercantile interchange, the effect of the negotiation of a loan between two trading countries is that the lending country can be drawn upon by the borrowing country without the preliminary shipment of goods for sale in the lending country. The negotiation of the loan, in fact, operates on the exchange market in the same way as the shipment of exports to an equivalent value so far as the borrowing country is concerned; and, so far as the lending country is concerned, it affects the situation in the same way as an increase of merchandise imports. When the contract interest on the loan falls due there is an obligation of payment in the reverse direction from that which occurred when the original loan was provided for, and the lending country is in the position of having claims on the borrowing country, not merely to the extent of its current exports, but, in addition, to the extent of the interest due; that is to say, its position so far as the exchange market is concerned is somewhat as if its exports were increased in value by the amount of the interest due. It has become common to refer to such a circumstance as one in which "invisible exports" are concerned, the amount of the due interest being the amount of the "invisible exports." The phraseology is, of course, meant to imply what has just been stated, that the effect on the exchange market is similar in kind to that which would be produced by an enlargement of the current export flow. In addition to shipments of merchandise and the settlement of loan and loan-interest obligations, the right to receive from another country, or the necessity to make payment to another country, may arise in other ways; thus, the carriage of goods by sea from country to country is an international service taking place outside the bounds of all countries. If, as appears the most natural course for the purpose of estimating the payment due on account of imports and the payment claimable on account of exports, the imports are valued as at the place and time at which they are received and the exports as at the place and time at which they are despatched, the change of value which takes place in the transport of goods between distant countries has not been brought into the account. This change of value provides the means of payment for the services of transport, including insurance, rendered in respect of the commodities. The nation whose ships perform the service of transport will, in general, have a claim against the country receiving the goods in respect of a part of the amount by which the value of the goods on their receipt in the importing country is in excess of the value of the same goods on shipment from the exporting country. In so far as the service of transport may involve expenditure in the course of the voyage at ports of call, the countries in which those expenditures have occurred will find the source of their remuneration for services rendered in the ultimate value of the goods in the country of importation.

Not only carrying services but other services, such as those of bankers, underwriters, merchants, and agents, may be, at any rate in part, remunerated elsewhere than at the place at which those services are rendered. Thus, servants of the Government of India may be, in part, remunerated for services rendered in India by payment made in England, payment which enables them to provide for the education in England of their children. Two other classes of payments which affect the claims of one country upon another may be mentioned briefly. The first is somewhat analogous to the case just described, at any rate in certain aspects. It is that of the traveller, whether for business or pleasure, who receives services of various kinds in the countries through which he journeys in the course of his travels. If he is not rendering in those countries, in return for payment there, services of a value sufficient to provide for his travelling expenses, it will be necessary that the balance, which may be the whole of his expenses, should be met from his home country. This will either increase the demand in that country for means of remittance to the other country, or it will increase in that other country the rights of drawing bills upon the former country. In either or both of these ways it will affect the exchange markets of those countries. The other case to which attention may be drawn differs from all the preceding in that, while they relate to goods delivered or services rendered for which commercial payment is made, the category to which attention is now directed is a category of payments for which no commercial equivalent passes. Tributes and war indemnities fall into this class, and commoner cases are the remittances home of emigrants to foreign countries, and subscriptions raised in foreign countries for the relief of distress in a particular locality. From the mere point of view of the monetary exchange market, the feature of interest is that, in all these cases, there is an increased demand for means of payment in the country to which the money is to be remitted, that demand finding expression in the country from which the money is to be remitted. It would be possible to make such banking arrangements that the actual position was transformed into an increased supply of the right to draw upon the country furnishing the funds, that is, there would be, in the country which is to receive payment, an increased supply of rights to receive the currency of the paying country in that country.

We may now sum up our survey of the main influences affecting demand and supply for bills of exchange. Still considering the case of two countries only for the sake of clearness and convenience, we have, in the one country, on the one side of the account, rights to claim payment in the second country in respect of—

(*a*) Exported merchandise or bullion.

(*b*) Loans agreed to be made to that country by the second country.

(*c*) Interest due on outstanding loans made by the first country to the second country or repayments of earlier loans to that country.

(*d*) Services of shipping, of bankers, merchants, etc., so far as payment for those services is arranged to be made in the country whose citizens render them.

(*e*) Expenses of foreign tourists and travellers.

(*f*) Remittances from citizens who have emigrated, subscriptions abroad to relief funds at home and the like, and tributes or indemnities receivable.

On the other side of the account there is a demand for means of payment abroad in respect of—

(*a*) Imports of merchandise or bullion.

(*b*) Amounts required to carry out an agreement for a loan to the foreign country.

(*c*) Interest due to be paid on outstanding foreign loans or provision for the repayment of maturing foreign loans.

(*d*) Amounts due for services rendered within the country by foreigners, in so far as those foreigners remit to their own countries.

(*e*) The expenses of travellers in foreign countries, except in so far as they are met by services concurrently rendered by those travellers in such countries.

(*f*) The remittances of immigrants to their relatives at home, subscriptions to charitable funds expended abroad, tributes or indemnities payable, etc.

The sale or purchase abroad of property, whether in the form of stock exchange securities or in other forms, has an effect similar to that produced by a contract for a new loan to the selling country by the country from which the purchasers derive the means of payment.

These, then, being the sources from which spring on the one hand a supply of remittances on a foreign country, and on the other hand the demand for those remittances, the question of whether demand and supply balance is, at any rate in part, a question of the price in the home currency of a given amount of the foreign currency to be received abroad. If supplies of remittances are abundant relative to demand, the rate of exchange tends in favour of buyers of remittances, and *vice versa*. How far the variation of price can be effective in ensuring a balance depends upon the circumstances of individual cases. If supply and demand do not balance, the situation may be adjusted either by a change in the supply or a change in the demand or both, or by a change in the price of the one currency in terms of the other. This latter change is in general rather the stimulus to the adjustment of the quantity of remittances supplied and demanded than in itself the direct means of ensuring a balance. A defect in balance may be met in either of two ways: on the one hand, some of the payments due may be deferred, so that the need for remittances can be reduced to the level of a supply previously inadequate; or there may be some special commodity which is so sure of a market in the country upon which remittances are deficient that its immediate shipment in substantial quantity may enable a short supply of remittances to be brought up to the level of the current demand. The feasibility of the former course—the extent to which it would be adopted—is dependent on the current rate of return on short loans in the money market, that is to say, if the exchange market affords a better profit than other channels of investment, financial resources would be available to defer the settlement of an unfavourable balance of obligation. With reference to immediate increased remittance of valuable goods, the possibilities of utilising this means of modifying the balance are peculiarly effective in those cases in which both countries have in circulation a full-valued metallic currency based on the same metal, the mints being open. In this case, should there be no ordinary merchandise available for immediate shipment in quantity, actual precious metal may be, in effect, transferred from the currency of one country to the currency of the second country. If gold, for example, is the standard of values and the material of currency in both countries, gold may be withdrawn from circulation in the one country, shipped to the second country, and form thus the means of actual payment of a current debit balance. Even if gold is not in circulation in the form of coin, if it forms the basis of security of an issue of paper currency, the transaction may still be carried out with substantially the same results.

Now, where we have two such countries, a little examination will show that the shipment of precious metal becomes profitable in the one direction or the other as a result of a comparatively small modification of the rate of exchange. To take the example of the exchange between London and Paris before the war, the amounts of pure gold in newly minted British sovereigns and newly minted French gold pieces of 20 francs were so related that the proportion of 25 francs 22 centimes to one sovereign were the proportions of sums of gold moneys containing equal amounts of the pure metal. Now, as parcels of gold coins could be shipped and insured between London and Paris for a sum of about 10 centimes to the sovereign, it would follow that, when more than 25 francs 32 centimes payable in Paris could be got for each sovereign expended on a bill, the means were provided to purchase currency there, pay the freight to London, and yet realise net the full value of the sovereign in gold. Similarly, if the rate fell below 25 francs 12 centimes to the sovereign, the actual shipment of coin from London to Paris would provide a more favourable return than the purchase of bills of exchange, even after payment of the costs of shipping and insuring the gold. This situation being created, it followed that only very special and temporarily urgent circumstances could carry exchange beyond the points in the one direction of 25 francs 12 centimes to the sovereign, and in the other direction of 25 francs 32 centimes to the sovereign. Beyond these points a commercial profit could be realised on the shipment of gold in indefinite quantities, that is to say, in quantities sufficient to adjust any ordinary deviation from the balance in the trading and other obligations between the two countries. The rates of exchange here mentioned receive the designation of "gold points," and, with a currency convertible into full-valued metallic coin and with open mints, that is to say, the right ensured to the citizen to convert into his own currency any gold he may present to the proper authorities, exchange will not move except within the limits of the gold points, and only within these limits can the movement of value of one currency in the terms of the other avail to modify the balance between debits and credits.

In the circumstances described as existent before the war, the effect of such a shipment of gold was to diminish currency and the basis of credit in the country from which the gold was taken, and correspondingly to increase currency and the basis of credit in the country to which the gold was brought. These changes, except in so far as they were accompanied by simultaneous and corresponding increases in the quantity of money-work to be done, that is to say, in goods to be exchanged against currency, would have a tendency to bring about an increase in the value of money as against commodities, that is to say, a fall in prices in the country exporting the gold; and a decrease in the value of money as against commodities, that is to say, a rise in prices in the country importing the gold. This fall and rise may be of quite small extent, but in so far as it is realised it has a further effect upon the balance of trade. In the country whose prices are rising there will be found a check in demand for commodities for export, and on the other hand there will be a tendency to take advantage of the higher prices for imports. It will be observed that the assumption is that the effect on prices is not specialised to a few commodities but is general. Similarly, in the country in which prices tend downwards, a check to imports will be felt as the profits on importation are reduced, while a stimulus to exports will follow a moderation of their price-level. The course of events is thus one which is calculated to provide an automatic cure for the lack of balance of foreign trade obligations, the self-adjusting feature of the mechanism being the free international movement of gold. Before the war, the most important commercial countries were those in which the existence of a gold-based currency, and a freedom of import and export of gold, made this type of case of international exchanges that which merited and received the greatest amount of attention. It has become essential, however, to give detailed consideration to the case in which one or both of the countries considered lacks a full-valued metallic currency and lacks freedom of international trade in the precious metals, this case being now more representative of general world trade conditions than that regarded formerly as normal.

We can without difficulty recognise the point at which the divergence between the conditions of the two cases arises. The means of adjusting a defective balance between demand for and supply of foreign remittances were pointed out to be a deferment of some part of the payment, that is to say, a credit transaction, or the actual shipment of a commodity certain of its market, which, in practice, means money material. When the latter course is cut off, the alternative to the former becomes such an adjustment of the price of the one currency in terms of the other as will enable debits and credits to offset one another. The limitations to var ations of this price, furnished in the former case by the gold points, being removed, there is indefinite possibility of adjustment by a fall in the value of the one currency in terms of the other ; that is to say, a rise in the value of the second currency in terms of the first. The possibilities of frequent and wide variations in the equivalence of currencies have found abundant illustrations, not only during the war, but even more since its conclusion.

## CHAPTER XVI

## VALUES IN INTERNATIONAL TRADE

IN dealing with trade between two countries each of which has a currency of paper inconvertible in practice, whether technically so or not, some peculiarities of the problem of international trade find particularly characteristic expression. For dealings within either country, a level of prices is established dependent on the volume of the paper circulation and the amount of business to be carried on by its means. The various commodities are sold at prices which register the effective expenses of production in each case, while the proportions between the prices of different commodities furnish a measure of the relative intensity of demand for those commodities.

In reference to the problem of the rate of exchange between the moneys of the two countries, the dominating factor for consideration is the balance of payments due in either direction, and, where payments in one direction greatly exceed those in the other, the market for international exchange will be over-supplied with drafts upon the country having excess payments to make, while the demand for those drafts will be weak. In these circumstances the value of the currency of the latter country tends to fall in terms of the currency of the other country in the exchange.

Let us endeavour to examine the situation from the point of view of the prices of commodities in the two countries. For distinctness let us designate the countries A and B. Further, in order to give greater definiteness to the expression of the problem, let us consider two commodities, $m$ and $n$ respectively. Their prices in the two countries may be such as to make it profitable for A to export both to B, to import both from B, or to export one and import the other. The remaining possible case, that neither $m$ nor $n$ can be imported or exported profitably, implies an absence of all commercial interchange between A and B. It is assumed that import and export of the same variety of the same commodity, in trade with the same country, is precluded by the conditions of the case. The terms of purchase and of sale abroad cannot be simultaneously more advantageous than at home. Let us briefly illustrate first the third of the three cases specified.

In country A the prices may be such that a given sum of money will buy twice as much of commodity $m$ as of commodity $n$, while in country B commodity $m$ may be much less cheap compared with commodity $n$, so that, in that country, equal quantities of the two commodities are obtainable for the same sum of money. Any other proportions would serve equally well for illustration, the only condition being that the proportion between the prices of $m$ and $n$ shall not be the same in the two countries. In the circumstances assumed there would be an advantage in the purchase in country A of the commodity $m$ and the sale by country B of commodity $n$ in exchange therefor, provided that the cost of the transfer of the commodities between the countries does not absorb the whole of the advantage expressed by the different relations of value in the two cases. Normally we should find, in such a case, that the money cost of commodity $m$ in country A added to the cost of transport would, when converted into the currency of country B at the prevalent rate of exchange, yield a figure less than the current price of commodity $m$ in country B, and the advantage of the exchange from B's point of view becomes obvious from the consideration of such price figures. A similar conclusion as to the advantage to country A of the importation of commodity $n$ from country B can readily be supported by a like argument.

Passing from the illustration of the third of the cases specified, it may be that, in the actual situation of events, the prices prevalent in country A are such as do not show a gain in the import of *n* and the export of *m*, but that—

(1) both *m* and *n* stand at prices permitting of their profitable purchase for export to country B ; or

(2) neither *m* nor *n* are on sale in country A at prices which would render their export to country B a profitable transaction.

In each case the current rate of exchange between the two countries is assumed to be used as a means of determining whether the trade in question would result in placing the commodity on the market in country B at a lower price than that prevailing in that country for the same commodity. Take hypothesis (1) where, owing to the existing rate of exchange, A's prices expressed in the currency of country B are, in the case of practically all varieties of merchandise available for trade, so low as to furnish a motive for export to B. In these circumstances, country A would be in a position to acquire purchasing power in country B, and this purchasing power would be available for any of the purposes for which international payments might be required. If payments on other accounts do not affect the balance seriously, so that we may concentrate attention on the merchandise transactions, country A acquires buying power in B, where the native products are all too expensive to warrant their purchase for importation into A. By the terms of our hypothesis, the actual transfer from B to A of the money of B cannot adjust the balance, the money being a mere symbol of value and not, like full-valued metallic money, the embodiment of value. The purchasing power in B acquired by A would thus be available for transfer to some third country, with which both the others are in commercial relations and which might be in a position to furnish goods capable of profitable import into A. The assumption of the existence of such a third country, however, evades the real difficulty before us, and the essential feature of the situation created by the assumed relation of prices is, that there are on sale a quantity of obligations to make payment to A while there is lacking a demand for these obligations. The effect must be that their value falls, that is to say, the rate of exchange between the two countries cannot be maintained permanently at a level which will make all the transportable commodities of the one cheap in terms of the money of the other. This conclusion, it is to be observed, is dependent on the hypothesis that merchandise exchange governs the situation. If there are other sources of international obligation, so that obligations on the part of country A or its citizens to make payment to B exist sufficient to absorb the whole of the value represented by the current exports of A's products, the conclusion reached above as to the one-sidedness of the market for drafts on A will not hold, and a course of exchange may be maintained which makes all A's products cheap in terms of B's money compared with the current prices of those products in the markets of B. If the logical consequences of this situation are followed out they will be found to lead to a steady trend of commodities out of A, the duration of which, and the volume of which, can only be limited, on the one hand, by the extent of the obligations to pay which are outstanding against A, or, on the other, by the resources in commodities at the disposal of A. Such a course of trade would, however, produce one class of result of importance to the problem. B's markets being flooded with products from A, there will be a tendency of prices downward in those markets for these classes of commodities, and, unless the demand is markedly inelastic, a point is likely to be reached at which one and another of these commodities can no longer be profitably sold by A at the current rate of exchange, so that, so far as such commodities are concerned, the trend from A finds limitation from its own consequences.

Some other features of the situation considered may perhaps be better appreciated if we look at the problem from the standpoint of the country B. From this standpoint we have a country with no commodities cheap enough to be profitably exported, while there are many commodities which may be imported at a cost, expressed in money, lower than the current prices in B. Viewed from this angle, in addition to the points already observed with regard to such a trade, it becomes of importance to note that the lack of means of payment on B's part must bring her imports to an end, in the absence of the provision from non-commercial sources of a means of payment. Such a means has been already suggested in outstanding obligations on A's part to make payments. In the absence of such already existing obligations, their place may be taken by an arrangement entered into for the express purpose of dealing with such a situation as is here considered, and a credit may be arranged to enable payment in A to be made for the commodities imported thence by B in these circumstances.

Our two possible hypotheses of everything cheap enough to be profitably exported and of nothing cheap enough to be profitably exported are illustrated by the position of the two countries respectively on the hypothesis with which we started. Whatever the range of prices within each country in terms of its own currency, in the absence of special obligations or means of payment (or, should such exist, then on their exhaustion), the one-sided character of the market for exchange will necessarily bring about such an alteration, in the value of one currency in the terms of the other, that our fundamental hypotheses break down, and it ceases to be true that all commodities simultaneously, or, conversely, no commodities, are commercially possible for export. The situation that we have imagined is, in fact, essentially a transitional or temporary phase of relations between any two countries. It is a phase rarely illustrated in ordinary circumstances of peaceful trade, at any rate as existing between important civilised communities, but it has been created, or a close approximation to its essential characteristics, at any rate, has resulted in a number of cases as a consequence of the great economic disturbances following on the great European War.

It might appear from what has preceded that the rates of international exchange are not at all closely connected with the currency conditions of the several countries involved. This, however, would be an erroneous conclusion. All that has been contended for in the preceding is that, when non-commercial influences do not dominate the problem, the effect of a disturbance of the balance between the imports and exports of a country will be expressed in a modification of the rate of exchange between that country and others, the effect of this modification being that, in place of a situation in which either all commodities were profitably exportable or no commodities were profitably exportable, there is created a situation in which the various commodities are, in virtue of their mutual value relations, divided into commodities profitably exportable and commodities profitably importable, there being naturally some in the close neighbourhood of the dividing line between the two classes. The currency policies of the various countries are not, however, matters of indifference in their international exchange relations. Commodities may be profitable to purchase in country A and transport to country B on the ground that their prices expressed in their home currency, when converted into terms of the currency of country B (which for brevity we may call the foreign currency), are found cheap in B owing to the figure at which the rate of exchange between the two currencies stands. Without a movement of that rate, however, the question of the advantage of such a transaction may be affected by a cause influencing the whole level of prices in country A. If, through operations affecting the currency in country A, prices in that country rise, the profitableness of purchase there for export would be likely to disappear for some classes of commodities at least; while if, owing to such influences as were referred to above, prices in A fall generally, such a fall will *pro tanto* offset any adjustment of the rate of exchange such as was concluded to be probable, based on the market conditions created in the circumstances supposed. Now an increase in the quantity of currency in circulation is a change of that class which increases the nominal price of all articles. The market rate of exchange may be adjusted to the relation between prices at a given moment in the two countries, but an increase in the volume of the currency, owing to its effect on prices, disturbs that relation and renders a new adjustment necessary. If such increase of the volume of the currency take place progressively, the process of adjustment found to be consequent on the one-sided movement of merchandise is continuously offset. Thus, in place of reaching a rate of exchange under the influence of which mutual exchange of commodities may take place profitably, the condition which forces a one-sided trade may not be corrected for a considerable period; it is, in fact, possible that inflation of the currency, and consequent rise in the price-level, may continually overtake the adjustments of the foreign exchange market or even outrun them. As, however, the constant inflation of the currency tends in the long run to defeat its own ends, the mal-adjustment resulting in the condition which we have been subjecting to examination cannot persist indefinitely. If the depreciation of the currency is checked, or if non-commercial elements in the balance of indebtedness cease to complicate the problem, the foreign exchange market truly provides, in a revision of the rates of exchange, a corrective for the assumed situation, as does the actual flow of money from country to country in the cases in which the money is itself a valuable commodity and not merely composed of representatives of value.

While, therefore, it is important to pay attention to the directions in which movement is stimulated through the operation of the economic forces brought into existence under such special conditions as we now assume, it cannot permanently be the case that, as between two countries in commercial relations with each other, the one can undersell the other in all articles simultaneously. As already pointed out, there will ultimately be established a situation in which some of the products of each country are so priced that they may profitably be purchased for export to the other country.

Attention should be given to one feature in the hypothesis upon which the preceding discussion is based, namely, that in the two countries the proportions between the prices of commodities are not identical. If it were a justifiable assumption that the scales of prices in the two countries were so related that the prices of different commodities bore the same proportion to one another in both countries, then one or other of the two hypotheses which we have been examining would necessarily be found to hold, that is to say, either all commodities in the one could be profitably exported to the other and profitably imported by that other, or no commodities could be so exported and imported. The stimulus to international exchange is, indeed, the same as the stimulus to exchange between citizens of the same nation, namely, that we are not all of us equally competent in all directions, and, just as the specialisation of occupations within a nation results from these differences of capacity, so also a differentiation of productive function may profitably grow up between different nations based on the same consideration. If we should claim that nations, as aggregations of individuals, possess similar capacities throughout, that is to say, that the one presents but a reproduction or reflection of the other's capacities, the fundamental reason for international exchange would disappear.

It was pointed out above that, following out the logical consequences of the hypothesis made, a state of the exchange market was created which would ultimately destroy a position in which all commodities might be bought in country A for use in country B more cheaply than they could be obtained from the domestic resources of the latter country. The same considerations apply to the case of an imagined exchange between two countries in all respects similar, and would bring about a position in which, though the cost of purchasing any commodity in one of the two countries might be less than its value in the second country, in virtue of the current rate of exchange, the difference would not be sufficient to provide remuneration to those who would be concerned in the transport and merchanting of the goods. A rate of exchange would, in fact, be established which would, in the assumed conditions, render all exchange impossible between the two countries. An alteration in the general level of prices in one of them, arising out of conditions dependent on the currency, might result in a temporary possibility of profitable exchange, but that possibility would be brought to an end as soon as its own effects upon the exchange market had been effectively worked out.

In what has preceded, the problem of international exchange has been approached from the standpoint of price, in the first place. The conclusions reached from an examination of the problem from this angle are not found to differ in their nature from those which result from the more traditional approach to the problem, that, namely, in which the relative costs of production of different commodities in different countries form the initial consideration in the problem. When we are considering the actual situation at a given moment, we are, in this case, as in that of value generally, concerned rather with the immediate supplies available and the conditions under which they are offered for sale. We cannot, however, confine our attention to these temporary phases of the problem, since by far the greater interest of the study of economic forces is found in the consideration of the nature of the permanent condition which, given the existing controlling forces, might be expected to maintain itself if once reached. The problems of equilibrium are, in fact, considerably the most important group of problems for study, and the dominating interest still attaches to the problem of equilibrium, even at a time when the general conditions of equilibrium have been violently disturbed, and when, accordingly, many of the problems of greatest immediate interest depend upon a play of forces incapable of yielding a permanently stable result. Whatever the immediate appearance, it is the fact that an exchange of goods takes place between nations not because one can advantageously supply all the needs of the other, but because each has some relative advantage in supplying some of the needs of the other, and in having some of its own needs supplied by that other.

## CHAPTER XVII

## THE FOREIGN EXCHANGES

THERE are some points which have been passed over somewhat more lightly in the preceding discussion than their importance justifies, and in the present chapter certain of these will be further considered.

In most of the earlier discussion attention was directed principally to exchange between two countries, though some reference was made to the possibility of other countries being involved in the resulting transactions. In actual practice the balance of payments due and receivable as between any two countries that may be considered might well be uneven, even though each of those countries were in a position in which its balance of payments to and receipts from the whole of the rest of the world were precisely adjusted. In examining records of the world's trade, we find constantly that, as between two countries, the flow of goods in one direction is of much greater value than the flow of goods in the opposite direction, and, while this condition may be, as already discussed, the consequence of obligations arising otherwise than from current dealings in merchandise, it is quite common that a considerable lack of balance arises from the existence of a kind of chain in international trading transactions; thus country A may sell to country B, country B may sell to country C, and country C may sell to country A. If the goods in these three transactions are of equal value—and we may neglect costs of transfer for the purpose of examining the real nature of the problem—these three transactions of sale need leave no balance of payment due; each country has delivered goods equivalent to those received, and it is only a question of adjusting claims to make the deliveries and receipts balance each other. This adjustment of claims is one of the most characteristic features of international trade transactions. Not merely as between different countries, but as between different times, there is also an adjustment effected which evades the difficulties created by irregularities, seasonal or otherwise, in the flow of goods in foreign trade. The case is, of course, only one particular example of the introduction of the process of lending and borrowing into foreign trade transactions, but it has a particular interest in view of its special nature. In foreign trade, as in domestic trade, it is very common for payment to be made and accepted in the form of a bill of exchange due some time after the date at which it is drawn; thus, in a particular line of business, payment by three months' bills may be the usual practice in the trade; in another line, payment by six months' bills; and in other lines by bills of even longer currency. It is thus not only in respect of the goods currently received that payment at a given moment becomes necessary, but to a considerable extent in respect of goods received some time previously. If the existing state of payments due to be made and received, respectively, be such as to create a movement in the market for the means of immediate payment, it may become profitable for merchants or bankers to utilise resources at their disposal for the purpose of supplying a larger amount of the means of present payment. In return for such accommodation they will acquire the right to repayment at a later date, and the profitableness of such a transaction will be dependent upon the relation of the rates of sight exchange and long-dated exchange on the one hand, and the current market rate of interest on the other. A sale of sight exchange covered by a purchase of long exchange, or the inverse process, brings into relation two measures of the profitableness of such a transaction. There is on the one side the difference between the rate quoted for bills of exchange having, *e.g.*, three months to run and the rate quoted for sight exchange, and, on the other, there is the current rate at which banks make advances on satisfactory security for three months. An active market will cause the two measures of the rate of return on money placed at the disposal of the trader to be either identical or to approach very closely thereto, so that the difference in the two rates of exchange may be expected to be sufficient, but only just sufficient, to yield the current rate for short loans on the amount involved in the transaction.

Not only in the adjustment of payments in time, but also in the adjustment of payments as between different places, bankers are the characteristic agents. An important phase of the activities of London merchants and bankers, which has been developed in consequence of the widespread relations of British business in all parts of the world, is that import and export business between other countries was, and is, largely financed through London. The use of bills of exchange on London as a means of payment between two centres which have not active direct financial relations with each other is very widely extended. This involves that one of the two countries shall find a means of making a remittance to England ; the other will obtain a credit entitling it to a remittance from England. Thus the financial balance as between England and various other countries is affected by many transactions in which England has no direct part.

In discussions of foreign exchange very common phrases are references to movements in quotations as being " in our favour " or " against us." It will be interesting to examine the sense in which these phrases are employed, and, in that connection, to return to the question of those rates which are known as the pars of exchange. As we have already pointed out, when two countries are concerned each of which has a currency of full-valued gold coins and admits unrestrained import and export of gold coin or bullion, the equivalence of their currencies can be determined with reference to the legislation governing the purity and weight of the coins. That rate of exchange is called the gold par, or the " mint " par, which renders equivalent two sums of currency whose pure gold contents are the same. It is a rate determinable by purely arithmetical calculations from legal enactments, and not dependent upon any definition of the balance of trade. The common statement that exchange is at par between two countries A and B when the amount to be paid by A to B is equal to that due to be paid by B to A does not furnish an adequate definition of the par of exchange, it simply asserts that exchange is at par when demand and supply are balanced. Now demand and supply could be balanced at various rates, so that the statement in question does not afford a definition of any unique rate. Moreover, the condition of mutual indebtedness between two countries cannot generally be ascertained, and we can only learn from the variations in the rate of exchange between them the general trend of the relations of mutual indebtedness. The definition, moreover, would not be explicit, since, when the amounts to be paid and received are not expressed in the same monetary units, the equality of the two cannot be tested without a means of expressing the value of the one unit in terms of the other.

It is a point worthy of notice that the existence in two countries of one and the same system of metallic currency is not a complete obstacle to the creation of a premium or discount in one of them on the money of the other. If the countries are widely separated, means of payment can only be physically transferred from one to the other at the cost of some expenditure of time as well as of freight charges. The deviation from an exact equivalence of unit for unit may be comparatively slight, or may be large, according to the nature of the obstacles in the way of transmission of the actual money material from one country to the other. But even though all artificial obstacles are removed, it still remains the fact that identity of monetary units does not ensure complete equivalence in value of identical sums of money in the two countries. The point can be illustrated with reference to exchange between England and Australia, or between England and South Africa.

As noted earlier, the necessity for the actual transmission of money material from one country to another may be avoided by means of various credit transactions, at any rate for a time. It is important to note the influence of the rates of discount current in the two countries in this connection. We have already seen that the spread between short-dated and long-dated exchange tends, in an active market, to correspond to the current rate charged by banks for advances. It remains to note the influence which this rate itself exerts upon the state of the balance of international obligations. This influence can, in its main features, be easily appreciated. If, in a given country, the rate of discount be raised, and with it the rate charged for bank advances of various kinds, it is clear that the attractiveness of this country, as a place in which capitalists may leave their funds for a while, is increased ; if the rates have also been raised in other countries, its relative attractiveness may not have been altered, and it is the country whose rates rise first which secures such advantages as may result from this relative attractiveness. As other countries come into line those advantages disappear. The raising of the rate, then, attracts foreign capital, and it operates also to check the development of demands on bankers for advances, since the cost of obtaining such advances has been increased by the raising of the rate. The market is thus affected on both sides, demand being checked and supply increased ; so that the normal desire to substitute future payment for present obligations is reduced, while the means by which that substitution can be effected are increased. To the extent to which foreign funds are either allowed to remain here instead of being withdrawn, or are definitely transferred here to take advantage of the higher rates, there will be, on the one hand, a diminished demand for the means to make payment abroad, and, on the other, an increased supply of such means of payment. This tends to lower the value of foreign currencies relatively to our own and thus causes the rates of exchange to rise, at any rate those rates the common expression of which is an amount of foreign currency equivalent to a given fixed amount of our own currency. Where the usual mode of expression is an amount of British currency equivalent to a fixed amount of foreign currency, the rates as quoted will fall in the circumstances contemplated. If the movement of the rate of discount produces an effect of sufficient violence, the rate of exchange will not merely move upwards, but will reach or even pass the point at which it normally becomes profitable to ship gold to this country. The question of the actual shipment of gold may turn on the special facilities for obtaining supplies for shipment, so that actual gold movements may occur while yet rates of exchange have not reached the normal " gold points." The movement of the exchanges which increases the quantity of the foreign currency obtainable for a unit of our own, the movement which carries the exchange towards the point at which shipment of the money-metal to this country may become profitable, is referred to as a movement in our favour. This phraseology appears to have taken its rise rather with reference to the second than the first of the two consequences just enumerated, but its appropriateness appears quite clear from a consideration of the former of the two. Similarly, exchanges move " against us " when they move in the direction of giving a smaller amount of foreign currency for each unit of our own, that is to say, move in the direction which, if the movement goes sufficiently far, may involve a shipment from this country of money-metal.

As was indicated in the course of the discussion of prices in their relation to international exchanges, the advantages accruing to countries engaged in foreign trade arise from the wider scale on which it is possible to utilise special facilities of production in any of them. It is of some interest to give a little special attention to certain of the consequences arising on a national scale from the development of the international exchange of goods. As was clear in the consideration of the conditions affecting values generally, when foreign trade was not brought into account, so, in more marked measure in the case where foreign trade is involved, the conditions of exchange are largely dependent upon specialisation of function. They involve a change in the constitution of the industrial organism in the countries concerned, or at any rate a modification of the course of growth which it would otherwise follow. An expansion in an industry in which an opportunity for profitable import arises will be restricted, or turned into a contraction, as a result of the opening up of a foreign source of supply, but, as purchase involves sale, so that the purchase of one commodity involves payment by means of the sale of another, the result in general is that, while one industry is restricted, the industry of the country at large, so far from being restricted, is afforded opportunity for expansion. Moreover, as those industries in any country are best placed for the purposes of export in which the most effective results are secured for a given expenditure of time and effort, the opportunity for enlarging the scale of foreign trade becomes an opportunity for obtaining an increased return to the aggregate of effort expended. The industry of the country is encouraged to expand in a different direction from that which it would have taken in the absence of the foreign trade opportunity, and it is not uncommon that, while attention is directed towards that effect of the development of the foreign trade which is seen in the restricted opportunities resulting from importation of commodities which, if not imported, might have been produced at home, the enlarged opportunity for profitable employment in providing the means of payment for those imports attracts little attention. Let it be said here that we are concerned, in making these remarks, not with the aggregate position of the balance of home manufacture and of import, but with changes in that balance resulting from new developments either in this country or elsewhere. Those developments are conceived of as involving payment as well as receipt, that is to say, we are not contemplating a development which creates an obligation to pay on one side, without involving the creation of a right to receive an equivalent of that payment. We are concerned, in fact, with commercial development, not with the results of political upheavals or military operations.

The problems resulting from the varying conditions under which production may be expanded are not fundamentally different in reference to foreign trade and in reference to home trade, and, though certain difficulties proper to the subject may be involved in considering foreign trade relations, it does not appear necessary to go over at length the cases in which an industry whose products take a place in international trade may be subject to decreasing, constant, or increasing returns. To a not inconsiderable extent the opening of foreign trade may enable a nation to evade or postpone the consequences of such a development in the magnitude of its demands as would, were its resources limited to its own territory, involve serious effects through the operation of the principle of diminishing returns. Thus the exhaustion of the more fertile of its resources may be postponed, or the necessity for resort to more difficult means of production may be reduced, by the establishing of commercial interchange with other countries in which such relative exhaustion was as yet not approached. On the other hand, the development of a foreign trade may yield advantages through affording occasion for organisation and production on a more effective scale than is required for the home market alone ; thus both home and foreign markets may be advantaged in cases in which an enlarged scale of industry involves reduced costs, through the development of more effective organisation. A country whose industrial development is relatively backward may obtain industrial products on terms approaching more closely those at which they are available in industrialised countries, if it secures those products by exchange with those countries, than if it should endeavour to establish, for the supply of its own limited market, a native industry in those products.

In considering these somewhat obvious advantages arising from the development of international trade, it need not be overlooked that increased interdependence of countries is not without its dangers. When a country depends for its supplies of an important commodity on manufacture or production of that commodity elsewhere, disturbances, climatic or political, from which it is itself free, may result in the non-fulfilment of reasonable expectations of supply. On the other hand, where a wide field of international exchange has been developed, and a network of transport agencies has grown up to accord with that development, though there may be danger of interruption of supply from one quarter, there is a possibility, at any rate in the case of many important commodities, of alternative supply from other quarters. The widening of the area of possible supply may, in fact, prove a stabilising rather than a disturbing element, as the history of our own wheat supplies sufficiently illustrates.

The development of international trade affords opportunity for profit to a nation by the development of the production of goods which find little application in its own national life. Notable examples are afforded by the asphalt of Trinidad, the nitre of Chile, or the rubber of Brazil, as well as by many other commodities whose profitable application in the industries of the producing countries is slight, but which possess high value when transported to Western Europe or North America. That the industries engaged in the development of these same commodities become in this way dependent on the maintenance and stability of the using industries in distant countries is true, but in these cases, because they are somewhat extreme illustrations, we can see clearly where the balance of advantage arises, seeing that, in the absence of the foreign market, these specialised resources would be practically as if non-existent. Nevertheless there is a danger or, at least, an inconvenience arising out of a development of foreign trade, inasmuch as changes of demand, influence over which is entirely beyond the reach of the producing country, may affect profoundly the welfare of that country. The situation is to some extent paralleled by one which may quite well arise in a self-contained country, namely, that a discovery of a new process may be made which renders the acquired skill of some of those engaged in the actual industry of the country no longer of service. It becomes necessary to effect an adjustment between the productive energies of the community and the modified opportunities for their employment consequent on the new discoveries. Since well-established customs are changed with difficulty and but slowly, even in the face of considerable changes in circumstances, the readjustment to new conditions will involve hardship and loss to some of those concerned. Changes in distant markets, where the conditions are not controllable and are not even fully known, appear to present greater risk than changes in the home markets. They certainly call for the exercise of wide-awake intelligence if the consequences of these changes, which are difficult to foresee, are not to be of serious import.

## CHAPTER XVIII

## FREE TRADE AND PROTECTION

THE discussion in Chapter XVI. of the relations between the prices of goods in different countries in trading relations with each other, leads to the conclusion that goods are imported either because they cannot be produced at home, or, if produced there, could not be produced profitably at prices as low as those for which similar imported goods could be had. Apart from the influence of prejudice or of custom, in hindering the establishment of particular branches of industry or in maintaining lines of business once established even after they have ceased to be profitable, it may be taken as obvious that, if a domestic production of any given class of goods could be carried out on such terms as to yield an adequate profit, such production would take place. The adequacy of the profit must be judged by the standard of profit prevailing in the country, and at the time, considered. It is only contended that a sound assumption is that capital and labour will be prevented from turning to a particular industry only by the attraction of greater or more certain profit in some other use. The words "greater" and "more certain" may be taken to imply the same thing. The probable profit is what must be considered, and amount and certainty are combined in a proper estimate of this "probable" profit. The fact that an industry does not exist in a given country may, then, be taken to indicate that entrepreneurs find other industries offer greater probability of profitable employment to all the available capital and labour, so that, when the more promising openings have been exploited, the resources of the country are all engaged. This seems the only generally satisfactory explanation of the neglect to exploit unused opportunities, and if we assume that facilities for the industry in question are found in the country, it is the explanation to which we are forced to turn.

It is, however, claimed that the powers of the state may properly be used to modify this condition of affairs, and render profitable some industries which do not present, of themselves, sufficient attractions to lead entrepreneurs to develop them. This is called a policy of protection, since it aims at preventing the competition of imported goods from checking the establishment, or the development, of a domestic production of the same goods. If what has been stated here and in Chapter XVI. is sound, the thing really aimed at is, to prevent the superior attractions of other investments, for the capital and labour of the country, from absorbing all the available supplies of these industrial agents; to enable the industry which is to be protected to occupy a position of sufficient strength to attract the capital and labour needed for its development. To do this it must be able to offer favourable prospects of profit to those who undertake its risks and become responsible for payment of wages to labour and a return to capital, prospects at least equal to those offered by the general run of industrial openings which do secure the funds required for development. This prospect of profit is to some extent ensured if the power to depress prices, which comes from the unfettered competition of imported goods, be limited or destroyed, or if such assistance is given as may make a profit reasonably secure in spite of such competition in the matter of price.

There are many who maintain that such support to special industries yields no net gain to the community, and that the soundest lines of development of its resources will be those which are ensured by leaving both internal and external trade to themselves. An equal field for all is believed to be the wisest motto. This is known as the Free Trade doctrine.

The protection of industries may be effected by several methods. Thus, a method practised in reference to railways by several countries is to guarantee, usually for a limited term of years, a minimum rate of interest on the capital of the company which builds and works a particular railway.

If the ordinary net revenue of the enterprise proves to be too small to yield the stipulated rate, the general funds of the state are drawn upon to make up the deficit. This means that the citizens of the country concerned are made to pay somewhat more in taxes than would otherwise be necessary, and that this additional sum, so gathered from the community at large, is handed over to the proprietors of the railway. What they fail to earn as profit on the working of the line does not result in a reduction of their revenue below a fixed point. Such a guarantee may encourage entrepreneurs to exploit districts the trade of which is too small, or too fluctuating, to give sufficient inducement to take up their development. The construction of means of communication and transport may be of importance, sufficient to warrant its encouragement, even before it promises a commercial profit, or even if no such profit can be anticipated at any future time. It may seem probable that the railway will contribute to the general development of the district through which it runs in such degree that, after a term of years, its operation will become profitable. This term may be so long, or the profit so doubtful, that it offers insufficient attraction to entrepreneurs. The guarantee attracts to this enterprise capital which would otherwise have been employed elsewhere. The prosperity of the district may be so promoted by the railway that its inhabitants largely increase their wealth, and the revenue of the government increases without increase of taxes. In view of the fact that the interests of the government, as representing the community, include the distant future as well as the present, the increase of its revenue here supposed need not be an immediate increase. A tax-burden on the present citizens, to provide for the carrying out of the guarantee, may be regarded as offset by the prosperity of a later generation, induced through the construction of the railway.

Looking at the matter in this light, it is natural to point out that the interests of future generations can easily be promoted at too great a price to those of the present generation. It is clear that, in order to justify such a proceeding as is here considered, the future gain should be well assured, and of amount sufficient to outweigh the sacrifice likely to be imposed on the present generation in order to secure it. Further, the capacity of the present generation to bear additional burdens requires to be taken into account. Finally, the comparison, of the benefit ensured by the guaranteed enterprise, with what might have been assured through the investment of capital and labour in other ways, had not the guarantee attracted it to the railway, must not be omitted. If the adoption of the method of guarantee draws from other countries capital and enterprise which could not have been secured without it, this consideration may be ignored, for the gain through other investments of the capital would have accrued where the community, whose interests we are discussing, would have been unaffected by it.

Differing substantially, both in form and in its results, from the method of guaranteeing a minimum return on the outlay necessary to establish an enterprise, or class of enterprises, is the method of granting a bonus to the entrepreneurs engaged in establishing such enterprises. The bonus may take the form of a grant of money or of land or both, or an annual subsidy for a term of years, or an exemption from, or reduction, of taxation or special forms of taxation, for a term of years. The amount of the burden placed on the community at large, for the benefit of special industries, is in this way more exactly defined than when a guarantee of interest on the capital invested is offered. If the benefit secured is more or less problematical, the price paid is known with greater accuracy. Moreover, the stimulus to effort on the part of the responsible managers of the enterprises thus aided is greater, since all the gain of success, or loss from failure, is gain, or loss, to them. The method previously considered may save the owners from the losses due to incompetent or unfortunate management, at least in part. In other respects, the same features call for consideration as in the preceding case, in estimating the desirability of making the sacrifice, imposed by the payment of the bonus, for the sake of the gain anticipated. It is obvious that, in the case of industries capable of affording a sufficient profit without public assistance, the granting of such assistance is unnecessary, and imposes an inequitable burden on the rest of the community. It would appear as if the method of guaranteeing interest on the investment of capital saves the community from sacrifice, whenever the conditions turn out to be sufficiently favourable to permit the earning of the guaranteed amount by the industry on its own account. The community, in that case, has merely to be ready to take the risk of that point not being attained. If there were a sufficient assurance of equally capable, vigorous, and interested management, equally enterprising and not more rash, the guarantee would present greater advantages than the bonus. Human nature being what it is, political influence may lead to the granting of bonuses of amounts disproportionate to the real difficulties which they are to assist in surmounting. It is to be noted, too, that rivalry between different localities may lead to the establishment of an industry, by means of a bonus, in places other than those best suited to it within the same national boundary-line. Where the practice of offering bonuses is followed by the minor divisions, such as the cities and towns, of a country, an uneconomic distribution of industries in the country may easily be the result.

A third method is the granting of a bonus or bounty proportioned to the quantity of the production of an industry whose establishment or development it is sought to encourage. Such a bounty is sometimes granted for a term of years, and decreases with the lapse of time according to an arranged scale. Thus the presumably greater difficulties, of the early years of the first establishments which engage in the industry to be favoured, are met by greater assistance, and, as the difficulties diminish, the amount of aid also diminishes, and the bounty may entirely cease after a definite date. If the need for assistance do not diminish with the lapse of time, it may reasonably be presumed that the circumstances of the industry are not such as would justify its support at the public expense. Should a permanent bounty be necessary, justification will need to be found in the indispensable nature of the product to the national progress, and the danger of dependence on any but domestic sources of supply, or in incidental advantages which may be expected from the establishment of this particular industry. Before giving more detailed attention to these possibilities, we proceed to consider a fourth method of giving support, at the expense of the community at large, to particular industries, namely, by means of taxes or bounties on import or export. We must first examine some special features of these methods of protection.

It is especially to the device of import duties that the title "protection" is commonly applied, and the protection referred to is protection against competition on equal terms between imported and domestic products. If the foreign producer must add, to his expenses of production, not only the cost of transportation from the foreign place of production, but also an import duty as the price of admission to the domestic market, it is clear that the profit to be made out of the sale of the goods will be less than if no duty existed, unless the price can be raised. The reduction of profit must reduce, and may destroy, the inducement to offer the foreign goods on the protected market. An elevation of price insufficient to fully offset the duty, and therefore insufficient to induce as large a supply of the foreign goods as would be forthcoming in the absence of a duty, may suffice to make the domestic industry a profitable one.

The question of whether or not an import duty is necessarily an influence tending to raise the price of the taxed goods, is one which has been a good deal debated. Consider the effect of imposing a new duty on some commodity. If it do not affect prices at all, the foreign producer or the merchant must bear the whole burden, and have by so much the less with which to meet expenses. This reduction would, in the great majority of cases, if not in all, lead to a reduction in their production of the commodity, or to its being pushed in any other markets where a less concession will enable sales to be increased. It would be an exceptional case where some extension of sales in other markets could not be secured by reduction of price, and a reduction of smaller amount than the duty under consideration would, so far as it went, permit the maintenance of the output without so great a loss as the amount of the full duty on the whole of what ordinarily went to the protected market under examination. The reduction of supplies in that market would tend to raise prices there somewhat, till a point was reached where the diversion of further amounts to other markets could not be profitably made.

If we started with the assumption that the effect of the duty was a rise in price equal to the duty in amount, similar conclusions would be reached. The rise of price would both check consumption and stimulate the offer of domestic goods at the raised price. The check in consumption would be felt by the foreign producers, who would probably seek to meet it by some concession in price. That concession would decrease the profit of this special market for the goods, and lead to a withdrawal of part of its supplies, to be distributed to other markets, rather than submit to a concession great enough to restore the old volume of trade, for this would mean shouldering the whole burden of the duty.

In the light of these considerations, it seems that the immediate result of the duty must be a rise of price by something less than the duty, but a rise nevertheless. The burden of the duty would thus be shared between the foreign producers and the consumers in the protected market. The conditions for the placing of the whole burden on the one or the other may be examined. If the producer (using this term to cover all the interests concerned with the goods up till the time of reaching the boundary line where the duty is exigible) bear the whole, we must conclude that it is less profitable, either to reduce production or to place some of the goods on other markets, than to submit to the entire burden of the duty. The protected market would thus contain the body of consumers of greatest importance, and these might be said to have a kind of monopoly of the demand for the commodity. Further, the ordinary net profit on the production of the commodity would need to exceed the sum of the duty and transportation costs from the place of production to the market in question. If it did not, reduction of production would involve a smaller loss than the entire burden of the duty. If, on the other hand, the consumer bear the whole burden, we need to suppose that the commodity is so necessary that it must be had, in as full supply as before, in spite of the raised price. This implies that neither it nor an efficient substitute can be secured from elsewhere at any price below that of the taxed goods, including the whole of the tax. Such entire dependence on a single source of supply for a commodity would be exceptional, and more exceptional still the absence of any check to demand on a rise in price. The conditions for the placing of the undivided burden on either party are not generally fulfilled, but are approximated to in some special cases. In the degree in which the one or the other set of conditions more nearly represents the conditions of an actual case, will the burden of a new duty be likely to fall mainly on the producer, or mainly on the consumer, as the case may be.

A similar examination of the remission of a tax formerly levied would lead to similar conclusions.

If, on the imposition of a new import duty, the new burden is shared between producers of the imported goods and the consumers of them (and of similar goods of domestic production); and, on the remission of an old import duty, the gain is shared between consumers of the imported product and its foreign producers; we may reasonably argue that, during the continuance of such a tax, the burden is similarly divided, and only under quite exceptional conditions can fall entirely on the one or entirely on the other.

A bounty on exports of a commodity from a country, on its institution, acts like the removal of an import duty in each and all of the countries importing the goods, and, on its cessation, like the imposition of an import duty in those countries. Hence, during its continuance, the division of its effects may be expected, and the principles considered above suffice for this problem, the detailed examination of which would involve the repetition of much that has already been said in reference to an import duty.

A bounty on import of a commodity into a particular country differs from the bounty on export, in that all sources of production to which the bounty applies are brought into account on the one side, the consumption of one particular country on the other, instead of the producers of the one country in the case of the export bounty, and the consumers of all importing countries. This case is so clearly that of the converse of a tax on import, that the statement at the end of the preceding paragraph is clearly justified in this, as in that instance.

An export duty, again, affects the relations between the producers of the exporting country and the consumers of all importing countries, and is the converse of an export bounty. Suppose such a duty newly imposed. If it were wholly borne by the producers of the taxed goods, the consumers would be unaffected, for at an unchanged price their demand would be neither diminished nor increased. Producers would only submit to this if the reduction of output, with such rise of price as might be thus induced, involved a greater sacrifice than the maintenance of output at the old price less the duty. For the maintenance of supply with the added burden on producers, it is necessary to suppose that all the sources of supply have previously afforded a profit sufficiently in excess of the amount of the duty for the reduction of profit not to compel the reduction or cessation of output from even the least profitable of these sources of supply. If, on the other hand, the export duty were added to the price, so as to fall entirely on consumers, it is not possible, in general, to conceive of no reduction of demand, even if there were no other source of supply of the taxed commodity. Any reduction of the amount demanded will operate to force a reduction in the new price, that is, to make it higher than the old by an amount less than the tax. The difference constitutes a burden on producers. Thus, here again, the argument points to a division of the burden. The more sharply the demand is checked by a rise of price, the smaller the proportion of the tax which can be made to rest on consumers. The less the production is affected by reduction of profit, the greater the proportion of the burden which will rest on the producers. This conclusion can be strengthened by following out the details of a similar examination of the effects of the removal of an export duty. Since the export duty is the converse of an export bounty, the conclusion stated above in reference to that case is supported by this closer inquiry.

It is to be noted, that the same kind of argument as has been applied to establish the fact of division of the burden of duties on import or export, and to indicate what influences the proportion in which the division of burden between producer and consumer takes place, will apply to the question of the division of the burden of other impediments to international exchange, chief of which is cost of carriage of goods from country to country. The reduction of this cost operates like the removal of a tax, its increase like an addition to a tax, on import or export. The technical advances, which have reduced freights so greatly during the past generation, have been equivalent to a general reduction of duties in all countries. Goods which could not have been profitably transported between distant places half a century ago make up a considerable part of the international commerce of the world to-day. Those who welcome the cheapness of transport generally, can, nevertheless, be found advocating a system of taxation which aims at reimposing the obstacles to commerce which these technical improvements have removed. In the general discussion of the chief arguments for and against a protective system, it will be convenient to hold more directly in view the method of protection by means of import duties. It is the method most generally practised, and the other methods will hardly need a special consideration if the general nature of the argument is made clear by reference to these conditions.

First, as to the contention that prices are not raised by import duties, the preceding examination of the case may be referred to as showing that the usual effect of such duties must be some elevation of price, above the level it would otherwise attain, and by a small or a large fraction of the duty imposed according to circumstances. If the existence of duties prevented the adoption of important economies in producing on a large scale, at some centre of production especially well situated, the price might be higher, by an amount greater than the duty, than it would otherwise be, for, without the duty, the expenses of placing the goods on the market might be diminished both by the amount of the duty and by some saving in ordinary expenses of production in addition. On the other hand, the supply of the market from foreign sources may check the growth of a domestic industry to a magnitude at which it can realise the chief economies of large-scale production and marketing. Hence, though the immediate effect of an import duty may be a rise of price, its ultimate effect may be a fall of price, through the fostering of a domestic enterprise. This is the case which has attracted a great deal of attention, as one in which convinced free-traders admit the possibility of gain from a protective tariff of customs duties: it is the case of the "infant industry." The point where much of the argument, as to the tendency of trade to run along the most advantageous lines, if left without interference, needs modification, is in reference to the question of whether present or future advantage is in view. In the initiatory stages of industrial enterprises, they may present no certain prospect of profit, but rather of loss. If the same men, who bear the losses of the early stages, could reap the profits, when a profit-earning stage has been reached, the advantage of interference would disappear. But this is not generally the case. Hence some encouragement to the pioneers may be desirable. Various methods of affording such encouragement have been mentioned above. The mode now under consideration is to secure an elevation of price of the commodity concerned by hampering or preventing the importation of that commodity.

That a rise of price is the real object of the imposition of import duties is clear enough, apart from the theoretic view as to the necessary tendency of such duties. If the price were not raised, the way would not be smoothed for the pioneer domestic producers. Subsequent reduction of price, when the industry gains strength, may arise from competition of these producers among themselves. Experience, however, shows that the price may be kept up, by some kind of mutual arrangement among producers, long after the domestic industry has been developed to a point where it can produce economically, and can realise a living profit at a low price for the commodity produced.

Hence, in considering the desirability of adopting this method, of encouraging infant industries by means of import duties, attention must be directed to such points as the following: Is the country really well adapted for the carrying on of the industry, if it were once established? that is to say, is the actual neglect of the resources concerned due to their real lack of promise, or to the magnitude of the preliminary obstacles to be overcome in order to develop them? There is the possibility that the capital and labour of the country may be diverted to enterprises which can by no possibility ever become worth carrying on for the sake of the profits they can yield of themselves. Hence, the suitability or necessity to the country of the industry, to which it is proposed to apply a protective tariff, needs to be assured if the interference with the freedom of enterprise is to be justified. Further, when the industry has secured a firm foothold, and is able to offer a reasonable prospect of profit without the import duty, the removal of the duty needs to be assured. This is a matter not easily secured, for vested interests grow up in connection with such a duty, and the industry may have attracted to itself more men and capital than can find profitable employment in it after the removal of the duty. In this latter case, whether reliance on the permanence of fiscal arrangements was reasonable or not, it will be made the basis of resistance to removal of duties.

Should there be numerous industries in which such vested interests have grown up, during the operation of a protective tariff system, the opposition to the reduction or abandonment of any part of the system is likely to have the support, not merely of those directly affected at the moment, but also of any whose interests lie, or may in the future lie, in the continuance of duties after they have ceased to be necessary.

These are not unimportant considerations, when applied to cases where the final gain, from the growth of an industry with tariff aid, is not very great compared with the burdens which must be placed on the community as the price of that gain. The question of the capacity of the ruling authorities to select industries, to which to apply the protective tariff system, which both need it and are tolerably certain to prove a real advantage to the country, needs to be taken into account as well. If private interests are likely to have more influence, on the decision as to the commodities on which duties shall be placed and the amount of each duty, than the consideration of the public welfare, the advantages, which the system of protective duties might yield, would be in danger of being so mingled with serious disadvantages as to be purchased at a cost which would more than offset those advantages.

Accepting the conclusion that, for a time, the price of a protected commodity is raised as a consequence of the protection, we must consider the effect on other interests of that rise of price. The outlay, on the protected article, of the average citizen, may be increased, unchanged, or diminished. In either of the two last cases, and perhaps in the first, he will have less of the goods, and will either seek to obtain similar satisfaction to that which they render him by the purchase of other goods, or have to endure the reduction in his satisfactions. If he purchase other goods in the place of those now too dear, he will pay more for equal satisfaction, unless we are to argue that he spent his means unintelligently before the duty was imposed, and spends them with greater wisdom afterwards. This may be so in some cases, but cannot be assumed as generally true. If, then, more must be spent on the satisfactions which the protected commodity can render, whether procured from its use or from the use of substitutes, less will be available for other outlay. Only in the case in which the raised price reduces the consumption so much that less is spent on the goods than formerly (and, pursuing the suggestion of the above, less on them and their substitutes together) will the amount available for other expenditure be increased.[1] In this case, the decreased demand for the goods may well mean that the domestic producer, having captured the market for himself, finds the outlet for his goods as seriously limited by the high price as it was by competition of imported goods.

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[1] The terms of exchange of imports for exports may be modified as a result of duties or bounties on import or on export. The investigation of the results would follow lines briefly indicated at the end of Chapter XIII.

The effect, on other industries, of the decrease of purchasing power available for exchange against their products, is in some cases serious. Thus, if, in a community where a large proportion of the people have barely more than enough to live on, the price of food is kept high through restriction of supplies from abroad by a high import duty, the producers of all the other goods which a prosperous people might buy find the market for those goods limited, owing to the small margin left after the purchase of the necessary supplies of food. Food accounts for half of the expenditure of large classes, and it is, therefore, clear that its price is a matter of prime importance to others than those most directly and obviously concerned. Moreover, the relation between the level of money-wages and the cost of living is of importance. If living is dear, wages must be higher than if living is cheap. This consideration does not entirely destroy the force of the preceding, for wages do not fall by as much as the cost of living when living becomes cheaper. Hence the wage-earning classes have a great immediate interest, and an important ultimate interest, in cheap food, while the employers of labour have a considerable apparent interest, and, indeed, a considerable real interest, in the cheapness of the food of those whom they employ. Thus the growing strength of opinion, in England, towards the middle of the nineteenth century, in favour of free trade in corn can be understood, apart from the pressure of famine which hastened the triumph of the policy of free trade. Employers of labour in the developing manufacturing industries of the country found their interests opposed to those of the land-owning classes, both as employers and as sellers of manufactured goods. They desired to produce goods at a low money cost, and to have a profitable demand for those goods at home as well as abroad. In England, at that time, protection meant import duties on food products, and that in spite of the long list of manufactured articles subject to duty. The real weight of the tariff lay in protection to agriculture. In comparing the strength of the sentiment in favour of free trade in England, at that time, and elsewhere at any time, this circumstance must be borne in mind. In Germany and the United States, for example, especially the latter, the weight of the protective tariff is found in the duties on manufactured articles. Hence the same argument cannot be applied to these cases, or will not apply with equal strength to conditions so essentially different.

When considering the weight of the argument, for protection to industries at their nascent stage, in the light of experience, the industries of the United States, or some of them, are often referred to as demonstrating the power of protection to establish industries on a sound basis. Some of the previous remarks, as to the obstacles to the removal of tariffs when they have become unnecessary, and when they afford opportunity to maintain prices at a higher level than is needed for reasonable profit in the industries, or than would be maintained were imports free, an opportunity which is not neglected, may be held in mind with advantage. But, in addition to this, the obstacles to the growth of industries in localities favourable to them, in the active and unrestrained competition of well-established industries of the same class elsewhere, are seen not to be insurmountable. The internal development of the United States may afford some illustrations of the aid rendered to struggling industries by protection, but it also affords illustrations of the ability of industries to struggle through initial difficulties in the face of entire freedom of internal trade. The expense of transportation is the only obstacle to the competition of the industries of different parts of this vast territory against those of other parts. If the infant industries of the country needed, or need, protection against the established industries of Europe, how is it that infant industries in some states survive without protection against the established industries of other states? The theoretical argument in favour of the protection of infant industries is worthy of careful attention, but needs discriminating application in the light of actual experience.

One point in the foregoing argument needs some further attention. It was urged that the action of the government in encouraging the development of special industries practically diverted to them capital and labour which would otherwise have found employment in other domestic industries. It was pointed out, in discussing the encouragement of enterprises, such as the construction of railways, by guaranteeing the interest on the capital invested, that such a guarantee might induce the investment in a country of capital which would not, otherwise, have been invested there. Similarly, the institution of an import duty on specified goods may induce the investment of capital in the production of such goods within the country, capital which, otherwise, would not have been invested in the country at all. There are instances where capital and labour have both been transferred to the protected area, attracted by the opportunity of profit thus presented. By this is meant that, in place of providing for renewals and extensions of appliances outside that area, the capital which would have been so used is employed in setting up new appliances within that area, and that labour of the required degree and quality of skill is attracted in the same way as the capital. A diversity of industry is thus secured within the protected area. To estimate the advantage obtained, we need to know how far this capital and labour would have been attracted, by the general industrial opportunities of the country in question, had the special industry not been rendered profitable through the operation of the tariff. This is difficult to determine in practice. So far as the dearness of the particular product is concerned, it forms a disadvantage to all industries in which it is a raw material, and indirectly raises prices of other goods, thus diminishing the real value of wages in so far as they are spent on goods whose price is affected. In producing for export, especially, such dearness is a disadvantage. The net advantage is what we are really concerned to know, but the gross advantage is the feature that attracts attention.

If the industries of a country be allowed to develop freely, the resources which offer the greatest immediate profit will be those principally developed. Thus, by exporting the products of the industries which depend on these resources, the exploitation of less productive resources will be restrained. Should the first class of resources be such as are exhausted by use, as in the case of mineral deposits, this exhaustion is encouraged by freedom of importation of other products. Were it made unnecessary to import such other products, the export of the exhaustible material of industry might be checked, to the ultimate gain of the country. This conservation of natural resources would be a reasonable policy. It must be remembered, however, that the conditions of industry change. What appears indispensable at one stage may be less so than is imagined, in virtue of the advance of scientific knowledge and technical skill, while, as has been already seen in another connection, there are not a few cases in which unsuspected sources of wealth are discovered, so that the exhaustion of those previously known loses some of its importance. This principle of the conservation of exhaustible sources of wealth must not be made the basis of an argument, in which the exports which are checked by restricting imports are dependent on renewable resources. In fact, while the contention is applicable to particular cases, it does not form an argument for indiscriminate reliance on protective duties.

It is also urged that a policy of protection affords increased employment for labour and tends to raise wages. In so far as the level of wages depends on the effectiveness of labour, the attraction to industries in which labour is not effective enough to make them profitable without protection would appear to tend to the reduction of the general effectiveness of the labour of the community, and thus to a reduced average level of real wages. So far as the contention is based on the increase of home demand for goods of domestic production, through the exclusion of foreign goods, it must be remembered that the raising of the general level of cost of production, through this reduction of efficiency, must check the foreign demand for domestic products, and thus go far to offset any stimulation of home demand, if it do not more than offset it. The maintenance of free trade, too, has not reduced the level of wages, in countries practising it, to that of low-wage competitors. Wages in England stand at a relatively high level, in spite of the unchecked admission of the products of countries with lower wage-rates. What such competition does stimulate is the rendering of labour cheap, but that is able to be done on a large scale by improvements in organisation and the introduction of efficient machinery. In fact, cheap labour and high wages are quite consistent. Products are not necessarily cheap because made by labour which earns low wages. Whether they are so or not depends on the nature of the product, and on the economy of organisation of the industry which produces it.

High nominal wages are said to necessitate protection for their maintenance. In so far as the preceding statements and arguments do not cover this contention, it may be admitted that the abandonment of protection would reduce wages in some employments faster than it would reduce the cost of living. Perhaps this effect might be felt widely for a time. But the reduction of prices which would be effected, and which, when felt in some lines, operated as the cause tending to depress wages, would extend to lines where it would affect the purchasing power of wages, and thus tend to maintain real wages, though nominal wages were reduced. The redistribution of industrial resources, following on the readjustment of relative values consequent on the abandonment of protective import duties, would involve a readjustment of wage-levels, so that some industries would experience a fall, others a rise, in real wages. The question at issue is whether the high nominal wages of specially favoured industries are worth the cost to the community which they involve.

It will be seen that the strength of the case for protection is found in the desirability of developing some national resources not yet fully, if at all, exploited, and which will become a source of net wealth to the community when developed. However presented, in fact, the really sound economic arguments for protection are various presentations of the case for aiding infant industries, and unborn infants with the rest. When a country has reached a stage of advanced industrial development, the difficulties attending the establishment of new industries are much less important than in countries whose industrial resources are at but an early stage of exploitation. Capital is usually abundant, and skill of all kinds is to be had at relatively moderate rates of remuneration. If varieties of skill are demanded which the country cannot supply, it is probable that a related kind of skill will be available, which, if combined with intelligence, can be adapted to the purpose in hand. Hence, the applicability of the infant industry plea to countries of advanced industrial development is not general. It has been already pointed out that, in putting it into practice, even where the conditions give it greatest presumptive applicability, great discrimination is necessary.

The economic argument is not the only one which has weight in the controversy between the advocates of free trade and of protection. Questions of national strength must be given consideration as well as questions of national wealth. The former depends, in modern times at least, on the latter to a great extent. Yet there may be some industries, such as those engaged in the manufacture of munitions of war, including war-ships, the establishment of which within the country is a necessity, and in reference to which the fact that foreign supplies could generally be purchased cheaply would be assigned little weight. Some occupations which are related to the fighting strength of a nation have received special encouragement on that account. Thus, the fishing industry has, at some times and in some places, been fostered as a means of securing a kind of reserve from which ships of war could be supplied with crews, composed of suitable men not entirely strange to life on the sea. The encouragement of rural occupations has been similarly urged, as affording men of superior physical endurance for the army. These policies involve questions of fact and technical detail which make them somewhat unsuitable for discussion here. Another instance, where like considerations have been urged, is that of the supply of food to a population predominantly industrial. The danger of interruption of food-supply in war time is one on which experts are not agreed. It may be remarked that, to provide England with food, for her present population, from her own soil, would require a thoroughness of cultivation which would probably raise its cost very greatly. The choice must, apparently, be made between industrial development and an agricultural development such as would mean a great decrease of the value of the annual product of the nation. Whether the less expensive insurance against war dangers would be found in such a change in type of the dominant industry, or in the maintenance of a navy adequate to guard the avenues of commerce, is the question which needs an answer. In making these remarks, it is not sought to deny that advantage would probably arise from some scheme aiming at retaining more of the population in rural surroundings. But the scheme need not have a protective tariff as an essential feature.

A brief reference will be sufficient to the view that a country suffers, by following a policy of free trade, because it is not met by a like policy on the part of its neighbours. It is true that, to realise the full advantages of international exchange, freedom from restriction on both sides would be needed. If it can be proved that freedom of trade is a net benefit to the country adopting it, its abandonment cannot cease to be a loss because the amount of that net benefit was smaller than it might have been under reciprocal free trade. To have freight charges reduced to a negligible amount would be an advantage, but it would be unreasonable to establish a system of import duties as a defence against the fact that transportation involves expense. Yet the imposition of a tariff, because a corresponding impediment to exchange is interposed by other governments, would be a not unlike proceeding to that named.

If, however, the contention is that, by imposing duties, a bargain for their abolition by mutual agreement is facilitated, a different case is presented. If this policy of retaliation be judged by its practical results, it will not appeal with convincing force.

One feature in connection with it, however, may be named as bringing out another of the arguments advanced on the side of protection. It is that import duties are necessary, to secure a steady market for domestic producers, when protection is the policy of powerful industrial nations. These nations exclude from their markets certain classes of products, and their domestic output of these products is swollen to the extent of the requirements of their domestic markets at normal, or even to those of busy, times. When the home demand falls off, the price in the domestic market is not correspondingly reduced, neither is the output reduced in proportion to the reduction of domestic requirements. The excess, which is not absorbed by the home demand, is exported, and may be sold at a price as low as its prime cost of production (see p. 59) without involving actual loss to its producers. The country which, while producing such goods for itself, has no duty on their importation, offers a favourable market, and its producers are liable to find themselves undersold at such times. To any reduction of the profitableness of their business which dull times may bring, is added the ruinous competition of the surplus produce of a protected neighbour. The neighbour's import duty checks them from competing in his home market, and thus, by forcing prices down there, reducing the inducement to slaughter a surplus elsewhere. Were an import duty in existence in this second country, the offer of goods in its market at the equivalent of the prime cost to their neighbours, with cost of carriage added, would be restrained, since it would involve a positive loss of the amount of the duty. If the uncertainties of a business, under the conditions considered in the absence of a duty, induce producers to abandon their enterprise, the result to the consumers in this second country will be that, when the neighbour has an active home demand, they will only get supplies at a high price, and when he has a slack home demand, they may get them at a low price. May not a steady, or fairly steady, price, even if higher than would be maintained in the absence of a duty on the goods, be preferable to, and not more burdensome than, such a fluctuating supply and price? Further, can such a state of things be secured?

The case presented above is that of a country offering a practically sole convenient market for the excess of the products of other countries over their temporary domestic requirements. It is frequently assumed, in presenting this case, that it is profitable to provide appliances capable of meeting the full demand of active trade, and, in dull times, to have them idle or producing goods which cannot be sold for the total cost of their production. It is true that the increase of appliances for production is often determined by exaggerated estimates of future demand, and that the situation considered is thus brought about. The degree of instability of supply and price which results will be dependent on the relative industrial strength of the two nations considered, so that the force of the plea for protection varies also.

One further consideration may be alluded to. It is that the danger of stagnation is reduced where the stimulus of competition from foreign producers, as well as from compatriots and neighbours, is applied. Where there is the ability to meet such competition, its effect is not wholly depressing. Difficulties which can be surmounted, and which are not vexatiously interposed, are not likely to be fatally discouraging. The confidence that exertion is superfluous is one of the influences tending to reduce the power of effective exertion. The call for constant watchfulness, and for the exercise of persistent ingenuity, to meet the competition of other countries in neutral markets, needs sometimes to be emphasised by the realisation that the home market is not unassailable. England owes not a little of her present industrial strength, and may owe more in the future, to the healthy operation of this competitive stimulus. Tacit or explicit agreements may remove the necessity for strenuous exertion to meet the competition of home producers in home markets, but such agreements are less readily made when foreign producers are in question. This consideration is becoming of increasing importance as the aggregation of businesses under a unified management becomes more prevalent.

Before concluding the chapter, it is necessary to point out that the conception of free trade does not involve the absence of all import duties. The spirit of the policy may prevail even where many such duties exist. In some circumstances, it may appear desirable to raise public revenue by means of duties on imports, rather than to adopt any other means. When this is done, the rule of "an equal field to all" is not transgressed when the goods on which the duties are imposed are not produced in the taxing country. If the local circumstances render them incapable of being produced there, or only at an extravagant expense, the rule is obviously not transgressed, for no producer is put on a better footing than others. If the goods be produced in the country, and an excise duty, equivalent to that imposed on imports, be levied on the domestic product, the same holds. The former case is illustrated, in the English system, by tea or coffee, the latter by spirits. These are, practically, charged with consumption duties, levied as import duties, or as import and excise duties combined.

The circumstances may render the levy of such excises impracticable, and yet practical exigencies may demand that revenue be raised by means of duties on imports. These duties are, under the conditions considered, necessarily protective whenever levied on goods similar to domestic products. A revenue duty should be at, or below,[1] the rate which yields the greatest revenue obtainable: a protective duty would preferably be made so much heavier than this as to check the importation of the taxed goods, even though revenue were seriously diminished as a result. If, then, the rates charged, and the commodities selected for taxation, are arranged so as to give the maximum of revenue with the least difficulty possible, the general purpose of the tariff as a revenue tariff will be clear, and its incidental protective features, though they may be injurious, will be accepted as due to fiscal exigencies rather than to a particular industrial policy.

[1] Below, so as to permit of ready increase of revenue, in case of need.

## CHAPTER XIX

## GOVERNMENT INTERFERENCE: TAXATION

THE discussion of the desirability of a protective system is, in strictness, only one part of a general enquiry into the relations of the government of a country to its industry and trade. What kind and degree of interference with private enterprise in the development of the resources of a country is desirable? This is a subject of too great scope to be handled within the limits of this chapter, so that the reference to it will be confined to a few general considerations. The broad principle, that those whose livelihood depends on their success in discovering, and putting into practice, the best forms of industrial organisation and the most profitable resources to which to apply their energies, are the more likely to succeed the less they are interfered with by officials of the government, may be accepted as a starting-point. So far as it applies, it rests on the reasonable assumption that men will do more to secure gain or avoid loss for themselves, than to benefit, or to protect from injury, the community of which they form part. Consequently they are more likely to discover for themselves what offers the best prospect of profit, how values may be produced sufficient to more than offset the expenses of production, than are the officials, who act on behalf of the government, to discover it for them.

But the private advantage of one individual may be secured only at the cost of injury to others, and those others may be incapable of judging of their own best interests. Those who are injured, too, may not suffer, as individuals, an injury of sufficient importance to warrant making the effort to ward off that injury. The interests of all those injured may be of an importance far outweighing the correlative advantage secured by those who gain; common action, by voluntary co-operation to resist the infliction of the injury, may not be capable of being secured in any other way than by action of the government on behalf of the majority of the governed. There are, too, not a few cases in which the assumption that individuals know best what is to their interest is obviously not justified by the facts of the case.

An illustration of the latter point is afforded by the case of the insane and feeble-minded. To permit such persons to exercise liberty of contract would be to give them the right of inflicting injury on themselves, and on others, without any counterbalancing advantage. The position of children is an even better illustration of the desirability of limiting freedom in some cases. Children are incapable of judging the effects of acts, and are also, in general, subject to the influence of others whose interests conflict with those of the children. Restraint on the acts of children may, therefore, be economically justifiable because they lack the power of sound judgment as to the adaptation of means to ends, and may be expected to use unrestrained liberty to their own hurt. Further, restraint on the acts of parents or guardians in reference to children is often justifiable, on the ground that the acts of such parents or guardians are apt to be dictated by considerations of apparent present advantage, and that the advantage they seek is their own rather than that of the children in too many cases. The interests of the community are concerned with the future of the children quite as much as their present or that of their parents or guardians, and interference in that behalf is likely to yield a balance of advantage where similar interference with adults, on their own behalf, would be inexpedient.

Such interference often takes the form of requiring the child to devote its time to education, instead of to industrial employment, until the attainment of a certain specified age. This limits the freedom, not only of children, but of parents and of employers. Present product is sacrificed in the hope of securing a largely increased productive efficiency in the future. Wealth is consumed in producing an instructed populace instead of a greater volume of the material means of production. This is certainly a fundamental breach of the principle of non-interference, but experience shows that the end sought could not be secured without such interference, since parents in general do not sufficiently realise the value to their children of an adequate education, or are unable or unwilling to make voluntarily the sacrifices needed to procure it for their children.

The same reasons, which justify interference on behalf of children may be applied to the case of women engaged in industry. In respect to hours and conditions of employment, restrictions are commonly imposed where women and children are concerned.

In other cases, there exist natural hindrances, to real freedom of contract, of a somewhat different character to those which affect persons whose age implies a lack of knowledge and judgment in regard to the nature of the contract, or whose age or sex implies subjection to the dictation of others in regard to the contracts entered into. This case may be illustrated by the provision of English law in regard to dwellings let at rentals below specified limits. It is assumed that the contract includes an undertaking on the part of the person from whom the dwelling is hired that it is fit for habitation. In view of the incapacity of most hirers of houses to judge of such matters as the soundness of plumbing which cannot be seen, and of other matters of which use alone affords a basis of judgment, and of the fact that the contract of hire precedes the use which can reveal defects, the imposition of an obligation to maintain a reasonable standard in such matters seems not to interfere with real freedom of contract. A contract, as to important terms of which one of the parties to it is necessarily ignorant, does not possess the characteristics which establish a claim to allow its adjustment to be settled by the parties directly concerned, without interference. Moreover, in the case selected for illustration, another feature calls for attention, exemplifying a further class of cases where restrictions on freedom of individual contract are defensible. Though the owner and hirer of a house are the persons most directly concerned in questions relating to the construction of the building, the neighbours, or the entire district surrounding it, would be liable to be affected by any serious defect in construction likely to constitute it a centre at which infectious disease might develop, and from which it might be propagated among innocent persons. To all intents and purposes these become parties to the contract, and may claim to insert in it provisions securing them from injury, and to exercise supervision, as to the protection of their interest, through the local government authorities of their district.

One further point may also be illustrated by reference to this same example. There are not a few cases in which a society may benefit if all its members follow a certain line of action, while such action on the part of isolated members of the society, the rest neglecting to co-operate, would not yield sufficient advantage to justify the expense or trouble involved. The cleansing of city streets is a case in point. If each of the inhabitants of a street cleanses the portion in front of his premises, the whole street gains at a trifling cost to each. If only one here and there takes such action, the neglect of his neighbours almost nullifies the advantage resulting from his effort or outlay. An ordinance, compelling each to care for his own share of the work, would secure to each sufficient advantage to warrant his outlay, if all the others were compelled to do their shares. But the same end may be attained, perhaps at less cost and with greater efficiency, if each contributes to the cost of the necessary cleansing, and the cleansing is carried out by contract or by a department of the local government. Since the loss to an individual who neglected to do his share of the work, or cause it to be done, would be small in case his neighbours all attended to their shares, compulsion may be necessary to secure to all the advantages of uniform action. This last instance illustrates a considerable class of cases in which the advantage of the community is best secured by common action through a government agency. When each would gain from a certain line of expenditure more than the equivalent of his share of the cost, while none would gain so much as to make it worth their while to undertake the expenditure on their own account, government enterprise finds its justification. Sometimes this principle is extended, and a balance of general gain, over the cost involved, is considered a sufficient justification for compulsion, of even large minorities, to share in an enterprise which benefits them less than the equivalent of their share of the cost.

It is not proposed to discuss here what line should be drawn between the fields of private and public enterprise. The relative efficiency of public enterprise, at any time or place, is an important factor in determining where that line should be drawn. It is sufficient for our present purpose to be able to recognise that there is a considerable range of services, and some commodities, which are provided by government enterprise, and that other government action is desirable in the general interest. Government control or supervision implies expense, and this expense needs to be met by an income. Though the province of government action were confined to administration, defence, police and justice, provision and maintenance of highways and sewers, and the lighting of the streets, a considerable public revenue would be required. When there is included a water supply, public libraries, museums and parks, and public schools, even if the larger field of street tramways, gas and electricity supply and the like, be not covered, the services of the agents of the government afford a far from insignificant part of the satisfactions purchased by the average citizen in exchange for his money income.

In some cases, as with a gas supply, for example, the mode of exacting payment may be the same whether the supply is provided by public or private enterprise, namely, through the agency of a price for the commodity. The determination of this price will, however, not necessarily be the same in the two cases. Even if there be not the distinction between private enterprises competing with each other and a government monopoly, the point at which the price will be fixed may be different. The difference may, of course, be due to a difference in efficiency of the two forms of enterprise. But, putting this aside, as capable of separate examination, the private monopolist may aim purely at securing the greatest money surplus of income over expenditure: the public monopoly may be administered either with this same end, or with the end of yielding its advantage partly in the provision of a supply on cheaper terms, and only partly, if at all, in the net income yielded by the enterprise. It is maintained by some that the price should be arranged so that the profit, over and above the interest on borrowed capital, should be maintained at a figure closely approximating to zero. It is to be observed that the whole community, in such a case, takes the risks of loss associated with the enterprise, while, when this last policy is followed, only those members of the community who consume the product in question share in the advantages of the enterprise. If the policy sometimes advocated, of providing, by public enterprise, commodities like tramway services at prices below their cost, be followed, there is afforded a more extreme instance of placing the burden of cost on one body of individuals, and giving the advantages purchased to another body. The latter body only comprises a part of the former, and may include many who do not share in the risk and expense.

When we turn to other classes of public services, other principles of sharing the expense may be adopted. In such a case as street cleansing and lighting, it might be argued that the sharing of expenses should be in the same proportion as in the case of requiring each householder to do his own share of the work, or to cause it to be done. The street area immediately adjoining the property owned or occupied by any citizen (we do not stay here to inquire whether ownership or occupancy should be the test) would then form the measure of the charge imposed on that citizen in respect of such services.

But the interests of each in matters of this kind are not wholly gauged by such a measure. In the case of water-supply, for example, it is, for some purposes, desirable to impose a charge of the nature of an ordinary price for the supply. But the community is also concerned to secure that an adequate supply of water shall be given to, and used by, its poorer members. The charge by quantity used may restrict the use of water for sanitary purposes, and thus the ends in view may be better served if the supply is not afforded on a basis of price, with a reduction for supply on a large scale. In fact, large users may find it to their real advantage to pay at a higher rate for their supply than is charged to the inhabitants of the overcrowded dwellings of the poor.

In the matter of other government services, such as those of the police, general defence and the like, no measure of the amount of service rendered to each can be applied, and thus no price in the ordinary sense can be fixed for these services. The distribution of such charges has to be determined. In other words, not merely are land, labour, capital, etc., claimants for a distributive share in the annual available output of wealth in the community, but the government is also a claimant, in respect of the expense of rendering services which are not paid for in prices charged for the services or products yielded. This share of the government is claimed and yielded in the form of taxation, and the problem now before us is to consider how the burden of taxation ought to be distributed, for here it is a case of what ought to be, rather than, as in the case of ordinary prices, what results from the action of the forces known to be in operation.

The problem of equity in taxation has two sides. The one is the determination of what aggregate amount of taxation each individual ought to be called on to bear. The other is the consideration of the distribution of burden brought about by specific forms of taxation, so as to choose such forms, and to use those forms in such degrees, as to yield that distribution which has been determined on as equitable. A connected question is that of the proper limits of government services for which taxation is to provide the means of covering the expense. How much government services the community can afford is a question of the same order as how much food a citizen can afford. The restriction of expenditure on government services to such limits as are reasonable, in view of the total resources of the community available for all purposes, is obviously as worthy of attention as the mode of providing for such expenditure.

In dealing with the first of the aspects of equity in taxation, named above, it is to be remembered that, in modern social conditions, the services of government are a matter of prime necessity to every citizen. The wealth he owns, the revenue he enjoys, even life itself, depend on efficient administration of well-devised laws. The total utility, then, of the services of the government to the citizen is measurable only by the total of his possessions, which are secured to him through the operations of the organs of the government. But, as in reference to the necessaries of physical life, it is their marginal utility rather than their total utility which is the measure of what is given for them, so, in reference to these necessaries of social life, the relative importance to different persons will correspond to the marginal utility of the services of government to each. This same conception, extended to cover the aggregate of citizens, gives a standard by which to judge of the point raised at the end of the last paragraph, namely, the amount which it is reasonable for a society to devote to government expenditures.

The view has sometimes been supposed to commend itself, that a fair contribution to taxation is secured when all citizens pay equally. As each owes everything he has to what the government represents, in the maintenance of law and order and in security from external violence, each pays justly when each pays equally with his neighbours. This would certainly be reasonable if all citizens were roughly equal in wealth, or in revenue, or both. In any state of society where wealth is distributed with approximate equality, the services or payments, required for the general ends of the society as an aggregate, would be equal from each member of the society. But where wealth is distributed unequally, there is a consciousness of inequality in such equal distributiom of public burdens. Whether clearly conceived, or only operative as a vague idea, the differences in the marginal utility of the services of government are felt to make equality of burdens, in the sense here described, an unjust distribution of those burdens.

In passing, it may be observed that the suggestion is sometimes urged that the recipient of government services on a wholesale scale might fairly receive some reduction of charge, as compared with others. Further, the owner of great wealth sometimes does much to secure for himself, at his own cost, the guarantees of peaceable enjoyment which are provided for others by general expenditure on government services. Might not this entitle such wealthy men to make a smaller contribution than the amount of their wealth would otherwise require? So far as a satisfactory solution is possible, it is suggested that the same test, of the marginal utility of government services, does not give any general support to these proposals.

Passing from that conception of equity in taxation which finds it in equal contributions by each of the contributors, we find it suggested that each is bearing his just burden when each pays in accordance with his ability, that is his power to bear tax burdens without being crushed by them. This test, again, is not easy to apply without some satisfactory conception of how the ability to bear burdens is to be measured. Shall wealth be the measure, or revenue? Or, shall the test of equality of burdens be afforded by considering the sacrifices involved in bearing them? This last test, that equality of burdens means equality of sacrifice imposed in their support, seems the most satisfactory, but requires some further examination. We have already disposed of the idea that, when wealth is unequally distributed, equal amounts of tax burden mean equal sacrifices for all. The next proposal to consider is that the principle of equal sacrifice leads to taxation in proportion to wealth or revenue. The latter, revenue, rather than the former, wealth, is the better test when equal revenues are derived from unequal amounts of wealth, and, in any case, in view of the fact that large amounts of revenue are received as the reward of personal service, wealth and revenue have to be compared in some way as indices of tax-bearing power. To estimate wealth according to the revenue it yields, and deal with revenue alone as the measure of taxable ability, is the best method. As taxes are recurring payments, in the main, they are properly considered in relation to revenue rather than to the capital or other source of revenue. In exceptional cases, special tax levies may be needed for purposes of non-recurring expenditure, and the distribution of the burden of such levies may properly take accumulated wealth into consideration, as affording a measure for justice in its allocation.

Does the distribution of tax burdens in proportion to the incomes of tax-payers realise equality of sacrifice? In one point the general answer has been in the negative. The poorest class of the community may, by such a sacrifice, be made to seriously trench on the necessaries for efficiency, or even for existence itself, while the rich sacrifice at most some part of the funds which would have procured additional luxuries, not reducing in any perceptible degree their productive efficiency. Further, if the society have any such institution as that of relief of the indigent poor from public funds, to impose burdens by taxation may do little more than create the need for assistance from such public funds, so far as members of the poorest class are concerned. Other questions of public policy, as well as considerations of justice, therefore, require some modification of the rule of proportionality of taxation to revenue. The minimum necessaries for existence, if not for efficiency, should be untouched by taxation. This modification gives the practical test of equity in the form that the tax burden ought to be proportional to revenue, but that, where revenues are below a certain minimum, there should be exemption from taxation. This rule, however, introduces obvious inequity at the margin where exemption ends and taxation begins. Moreover, if it be only an excess of revenue over what suffices to provide for the necessaries of life which indicates an ability to bear taxation, should not that excess, rather than the whole revenue, be the measure of the just tax burden?

The further suggestion has recently been made that, in place of a single minimum of exempted revenue, there are, properly speaking, corresponding amounts of revenue for various grades of society. In the case of the smaller incomes, the necessaries, the provision for which is the basis of claim for, and the measure of, exemption from taxation, are necessaries of physical existence almost exclusively: as incomes increase, there is a corresponding expenditure, on a larger scale, needed for the maintenance of efficiency, and the amount of such expenditure grows as revenue grows, in general, reaching, perhaps, a maximum, but this maximum will be likely to be far in excess of the minimum.

May not the claim be made for a deduction of such a varying amount, to provide for necessaries, before taking income as the measure of tax-bearing power for all grades of income? If the claim be admitted, then the equitable share of taxation falling on any tax-payer will be proportioned to the remainder of his income after the deduction, from its total amount, of the allowance for maintenance proper to an income of that magnitude.

The admission of the propriety of proportioning taxation to something less than the full income practically leads to a claim that taxation may properly be, not proportional, but progressive, for the method of deduction here considered, though given the name of degressive taxation, may be adapted to produce just such results as may be obtained by making taxation bear a constantly greater proportion to revenue as the amount of revenue increases. To secure this by the degressive method, it is only necessary that the deduction allowed should represent a smaller percentage for large than for small incomes.

The general ground of the claim for progressive taxation is found in the belief that the sacrifice of the same percentage of incomes of all sizes involves a larger sacrifice for possessors of small incomes than for those whose incomes are large. The degree in which the sacrifices differ is, however, not easy to determine, and proposals for progressive rates of taxation are necessarily lacking in definiteness, so long as some basis for the rate and limits of progression is not provided. The form of application of the progressive principle above sketched offers more security for the recognition of reasonable limits, than the simple progression of rates of tax as incomes increase by stipulated stages. The reduction of the degree of arbitrariness in the application of the principle removes an obstacle from the consideration of the principle on its merits.

It is to be noted that the above outline discussion deals with the proper measure, or test, of just distribution of tax burdens as a whole, not with the lines along which specific taxes should be designed. The most satisfactory conception, though one not easy to reduce to practical application, is that the marginal cost, to the tax-payer, of the government services for which taxation pays, should correspond with the marginal utility to him of government services. The compulsory nature of tax payments would, in that case, be matter of form rather than an element modifying the relation of cost to value. Now the marginal utility of his disposable resources, say of money for convenience, to any citizen tends to be the same for all lines of expenditure, for otherwise advantage would be realised by the transference of some part of the outlay from one line to another. The reduction of income freely disposable must raise the marginal utility of that which is left. If the changes of marginal utility, for different grades of magnitude of income, due to the devotion of a part of income to the payment of taxes, are such as to raise the marginal utility in greater proportion in some cases than in others, the desired equality of sacrifice is not secured. In view of the fact that, of large incomes, a larger part is commonly devoted to non-necessary expenditure than is the case with small incomes, it is probable that the rise of marginal utility proceeds at a slower rate, for equal percentages of reduction of income, in the former than in the latter class of incomes. If this be so, it will be a ground for a larger percentage levy on large than on small incomes. The degree of the increase in percentage, however, will not be proportional to the magnitude of the total income, and may be very much less than proportional to it. If taxation were so distributed as to leave unchanged the proportions of the marginal utility of money to the recipients of incomes of different magnitudes, the tax system might be said to involve no redistribution of property as an incident to the raising of the revenue needed to cover government outlay. It would, however, have the result of dictating the kind of satisfactions available to each as the equivalent of the tax payments, and this consideration may serve to indicate an important reason for extending the range of services, for which payment is made in this fashion, only with great reserve. From the point of view of tax-payers, as already indicated, the question of importance which would remain would be whether the marginal utility of government services was sufficiently high to warrant the extent of deduction from private incomes needed to cover their cost. Further, the extension of the principle, of providing through government action for needs which can be satisfactorily met by private enterprise, needs to be justified on these grounds, if payment is to be made by a tax, and not wholly by a charge of the general nature of a price. As the sphere of government activity is extended, there is considerable risk of the inclusion of services notably more necessary to some sections of the governed than to others, and not essential to some. The ground for making the payment take the shape of a tax may be, either that the payment covers services which are essential to the general welfare, and the allocation of the specific benefits of which, among the participators in those benefits, cannot be made; or, that the benefits accrue to all in proportions which make their value to each tax-payer correspond to his payment in respect of them. This last phrase may be taken to mean that the extent by which taxes must be increased, to cover the outlay incurred in connection with the rendering of a particular class of services by the government, may be regarded as the tax payment in respect of those services.

Where it is deemed desirable to secure, through the action of government, benefits for particular sections of the community, and a satisfactory measure of the services received can be devised, the form of payment by a price set on the services, sufficient to entirely cover their cost, would be more just than payment through general taxation. Where special classes benefit in special degrees not easily or precisely measureable, a greater burden of taxation on those benefited than on others would be in the direction of justice. In some cases a compromise may be desirable, as indicated earlier in this, and in the preceding, chapter, by which the supply of government services should be rendered in return for a price not fully covering their cost, the balance of cost being covered by general taxation in recognition of a substantial general benefit accruing from the rendering of such services to special sections or classes of the community.

It remains to consider by what means the distribution of taxation can be made to correspond to the conceptions of equity which may be entertained. For that purpose attention must be given to the mode in which different interests are affected by each of the chief classes of taxes.

## CHAPTER XX

## THE INCIDENCE OF TAXATION

IT may be pointed out that taxes are paid by persons, not by things. When we speak of the taxation of goods, we mean that a tax is placed on some person or persons having dealings or relations with those goods, the amount of the tax being connected with the amount of the goods and the relation of the person to the goods. Thus, when an annual tax is collected from (say) owners of land or houses, the amount of the tax being proportioned to the capital value of, or to the annual revenue derived from, the land or houses, we commonly call such a tax by the name of a tax on the land or houses. This property, however, serves as the measure of the amount of tax which is levied on persons whose relation to the property is that of ownership. So with other varieties of taxation of commodities. The form of the tax must not hide the fact that the real interest of taxation is a personal interest, and the question which is of importance is whether each citizen bears his just share of the common burdens, rather than in what manner that share is secured from him, except in so far as the irksomeness of the tax burden may vary with the manner of its levy. Nevertheless, seeing that the total amount collected from any tax-payer must necessarily depend on the forms of taxation which are employed, it is very far from being a matter of indifference what those forms may be. There is one feature, connected with the selection of forms of taxation, which is of very great importance in this connection. It is that the tax may be collected from one person and its pressure be really made to rest on another. This has already received some illustration in the discussion of import and export duties (see p. 249, *et seq.*). In the case of a duty on tea imported into the country, it is somewhat obvious that the importer pays the duty, but that he has no intention of bearing the burden. He expects, and, speaking generally, contrives to pass on the charge to those to whom he sells, who pass it on in turn till the final resting-place of the burden of the tax is on the consumer. Some increase of the burden is, in fact, generally produced in such a course of transference from one to another. None of the dealers who advance, or become responsible for, the duty do so gratuitously, and the charges, made as a recompense for making such advances, are added to the burden which the duty imposes on the consumer. In distinguishing between the original person who pays a tax and those who finally bear the burden, it is convenient to refer to the former by speaking of the impact of the tax, the latter by speaking of its ultimate incidence. The incidence may or may not differ from the impact. Where it does differ the tax is called an indirect one, where it is the same the tax is called direct, as the levy is then made directly from the person who ultimately bears the burden of the tax. The problems connected with the determination of the real incidence of various forms of taxation are among the most difficult problems of economics. We shall only consider some of the most general features of this class of problems.

It is useful to examine generally the effect of taxation of the chief forms of income, namely, rent, interest, wages, profits. The mode of levying such taxes is of great importance in determining their results, but we shall, for the purposes of this discussion, assume that the taxes are levied separately and distinctly on these constituents of income. Take first the case of taxes on rent. Inasmuch as the amount of rent is not, as was seen when it was discussed (see Chapter VII.), a cause of high or low price for the commodity in whose production the rent-yielding agent is employed, a tax on rent is not an influence affecting that price. If the government, for example, claim ten per cent. of rent, that fact does not influence the total of the rent or the supply of the commodity concerned. This latter is, presumably, already arranged on a basis calculated to yield a rent larger in the aggregate than either a less or greater supply would yield. If that be so, then ninety per cent. of the rent is also greater for that scale of supply than that same percentage would be for any other scale, whether larger or smaller. Consequently, the incidence of such a tax is on the receivers of rents. The total rent yielded is unchanged, but the proprietors of rent-yielding property receive only ninety per cent. of the amount instead of the whole. They cannot improve their position by modifying the total rent-yield, for anything which would add to it would have been a source of gain independent of the tax, and cannot, therefore, be brought into existence by the introduction of the tax. If they adopt changes lowering the total rent-yield, they will thereby lower their share, viz., ninety per cent. of that total. Thus the burden of a tax on rent cannot be shifted. This applies to true rents of all kinds, whether derived from land-ownership, monopoly rights, or other sources. It applies in part, too, to quasi-rents, though the duration of the conditions which give rise to the quasi-rents is modifiable as a result of such taxation of rents.

The taxation of interest stands on a very different footing. It reduces the yield due to ownership of capital, and thus influences the supply of capital. There is reason for believing that the lowering of the net yield rendered by capital to its owner would discourage accumulation, and thus reduce the volume of the supplies of new capital. This reduction of volume would modify the marginal productivity of capital, for the application of capital to some of the less productive purposes would be restrained by the scantier volume of new supplies. Thus the marginal productivity of capital would be raised in a way which reduced the total productivity of industry. This rise of marginal productivity would correspond to a higher loan-value of capital, and thus, at any rate in part, the burden of the tax would be shifted from the owner of capital to its users. This shifting would, in the course of time, transfer the burdens to the consumers of the commodities in the production of which capital is employed, that is, practically remove the burden of the tax, on the revenue yielded by capital, to the consumers of goods. It is not contended that no part of the burden would remain on the owners of capital as such, or that, as consumers, they would not bear some part of the diffused burden, but that the chief part of the tax placed on owners of capital, as receivers of interest, would not permanently remain on that class of the community.

It is further to be noted that, if the tax on interest do not fall equally on the interest yield of all kinds of capital, there will result a preferential investment of capital in forms which escape taxation, and an avoidance of taxed forms. This will tend to lower the marginal productivity of untaxed forms of capital and raise that of the taxed forms, till the net yield to the owners approaches equality. Further, if land, and the revenues from land ownership, remained unaffected by a tax which fell on revenues from capital, and no corresponding burden were placed on the revenues from land, land values would rise relative to capital, and the ownership of land would gain in attractiveness from the investment point of view, so long as the rise of its value had not counterbalanced the freedom from taxation of the revenues derived from it. Inasmuch as it is practically impossible to subject to equal taxation the revenues from trade capital, estimated in money, and those derived from the use of consumption capital, which are, for the most part, not estimated in that form, the effect of taxes on interest might be, in part, to encourage the creation and ownership of consumption capital rather than of trade capital.

Taxation of interest must, in practice, take the form of taxation of revenues derived from the ownership of capital, and is likely, therefore, to touch some other classes of revenue in addition to interest. In the degree in which this occurs, the practical problem is but partly covered by the above considerations.

The particular class of revenue most likely to be included with interest is the remuneration for risk-taking. In so far as a reduction, in the gains derivable from undertaking the risks of industrial and other business operations, would operate to diminish the willingness of owners of capital to accept the risks, the taxation of profits would tend to divert capital and enterprise to the less risky openings for their employment. This would increase the competition in such lines and operate to reduce the general return to capital, and, in the way already noticed, as a check to the rate of accumulation, with such consequences as have been suggested above. The taxation of profits, therefore, except in the degree in which they proceed from monopoly, or from rent-yielding differential advantages in production, is not, in the long run, taxation the burden of which remains where it first falls. It is gradually diffused over the community as a whole.

Turning to the subject of taxes on wages, the same kind of problem is again presented. If a reduction of the net receipts of the wage-earner left unchanged the amount and quality of his work, and had no influence on the increase of numbers seeking to earn wages, the burden of the tax would rest wholly on the wage-earner. He would, in that case, give as much and receive less, that is to say, less for the use of himself and his family. In general, however, the influence of such a reduction in net remuneration would be found in a reduction in efficiency of the worker. Thus the cost of his product would be raised, and some share of the tax burden thrown on other classes. The consumers of the goods would have to pay more for them, without the entire additional payment becoming available for raising the remuneration of the labour. A part of such increased cost of commodities might go to provide an addition to the labourer's wages, thus modifying the burden of the tax on the wages. In view, too, of the fact that the net remuneration of labour influences, in general, the rate of increase of the numbers of the population, a gradual modification of the supply of labour might operate, as in the case of capital, to produce the result contemplated above, namely some increase of the rate paid for labour, thus reducing the net burden of the tax so far as the labourer is concerned, and distributing a share of it among other classes than wage-earners. In so far as the diffusion of the burden throws it on consumers as such, the wage-earning classes will not escape the burden, since they include so large a part of the consuming public. Whether they, or other classes, will be most affected, will turn on what kind of commodities are most affected. If it be commodities chiefly consumed by the wealthier classes, these classes will, as consumers, bear part of the burden of a tax on wages. If it be commodities chiefly consumed by the wage-earning classes, these classes may bear as consumers part of the burden which they throw off as recipients of wages.

As in the case of interest, so also in that of wages, taxation affecting special kinds of wages only will influence the distribution of labour in the various industries, and be a cause affecting the relation of the wages in taxed and untaxed employments to each other. As noted earlier in this discussion, where wages represent the minimum necessary for existence, a tax on wages would need to be balanced by some form of dole, whether from funds provided by taxation or from voluntary contributions. This use of such a form of taxation would hardly be a wise course. If the proceeds of this part of a tax on wages are handed back to the payers, as recipients of poor-relief, waste is combined with degradation. If the funds distributed as poor relief are provided by voluntary contributions, from those whose incomes more than suffice for their needs, the rendering of such contributions necessary by taxing subsistence wages is, in effect, laying a burden due to taxation on these contributors.

In considering the effect, produced by taxing wages, on the efficiency of labour, it must not be left out of account that what is contributed in taxation is not wholly lost. The expenditure of tax-revenues, by the governments which receive them, may contribute to the efficiency of labour as much as, or more than, labour loses through the diminution of the part of its earnings left free for personal and family expenditures. Wherever such a result accrues, the consequences deducible from an assumed reduction of efficiency, as a result of the tax, must be reconsidered or qualified. A similar consideration would apply, under like circumstances, to taxation of the revenues from capital or from land. The case may be exemplified by a practical instance. If a tax were levied on fire-insurance premiums, and the proceeds expended with such efficiency, in reducing the risk of occurrence of, or damage from, fire, that what was left to insurance companies of the old rates of premium, after deduction of the tax, sufficed to cover the reduced risks, the imposition of the tax would be no reason for any rise of insurance premiums.

The tendencies to the transference of the burden of taxation from class to class in the community, which have called for attention in what precedes, would partly disappear if a system of taxation were made up of such taxes, on the various classes of revenue, as imposed equal burdens on all classes. Thus the equal taxation of rent and interest would destroy the advantage of holding property yielding rent rather than property yielding interest, or the contrary. The transfer of part of the burden of taxes on wages to consumers not belonging to wage-receiving classes, that is to say, to those whose revenues are made up of rents and interest and profits, would be checked if these classes were so burdened by taxation imposed on them that higher prices for the products of labour led to a serious reduction of demand. Such a reduction would throw back the burden on labour in the form of lack of employment, that is, a diminished opportunity to earn wages. In the degree in which taxes, on wages, interest, and profits, reduced the supply of labour, of capital and of willingness to take risks and responsibility, the burden of taxation would be thrown upon those whose revenues are derived from agents of production the supply of which was unaffected by taxation of the revenues yielded by them. This practically means that, as between the three classes of revenue named, readjustment of burden might be checked if the burden on each were such as to produce the appropriate effect on the supply of the productive agents concerned in yielding these revenues. As between this group and receivers of pure rents, the sources of which continued unchanged in supply in spite of the taxation of the rents, a shifting of burdens would be possible in spite of adjustment of the taxation of the different classes of revenue. For example, land remaining in undiminished supply, and labour and capital being supposed checked in supply as a result of taxation, the division of the joint product would be more in favour of owners of capital and labour, less to the advantage of owners of land. To produce this result, the check in supply which the taxation tends to produce must become actual. If the operation of other influences offset the restraining effects of the taxation of the revenues arising from capital and labour, the throwing off of the burden of taxation will be prevented. The mode of expenditure of tax-revenue may, for example, do more to strengthen the competitive position of some classes than of others, and the ultimate distribution of burdens be modified by this feature. It is to be observed that no small part of government expenditure tends, in modern times, to the advantage of the wage-earning classes. Thus the provision of facilities for education, such as schools, museums, libraries, technical institutes, and the like, is calculated to strengthen the position of wage-earners. Perhaps this strength may be derived even more from a real increase of productive efficiency than from a larger power to secure an advantage in distribution. The effect is of the kind already considered, where the outlay of the revenues administered by the government does as much, to add to the advantages of a taxed class, as the exaction of the taxes does to reduce those advantages. If, further, the expenditure of public revenues be made in such a fashion as to occupy part of the field otherwise open for the employment of private capital, the effect found to follow the check on accumulation, which is imposed by a tax on interest, may be reduced or nullified. If the demand for capital be decreased, the check to supply will not raise the marginal productivity by so much as if no such limitation were imposed on the demand, if it raise it at all.

What precedes will have indicated sufficiently that the final incidence of any tax cannot easily be deduced from a knowledge of the original impact. If, in addition, we take into account the fact that individual taxes are quite generally contrived so as to fall on more than one kind of revenue, while individual tax-payers quite commonly enjoy revenues made up of portions from more than one of the chief classes considered, the difficulties attending the determination of the distribution of the burden of any actual system of taxation, among those who pay the taxes, will be obvious. Yet, in order to attain justice, it is necessary to have some knowledge of the proportions of the incomes of different classes of citizens which are absorbed by tax payments, and to adopt such forms of taxation as are likely to yield a result in conformity with the standards of equity which are recognised, as well as to be convenient from the point of view of the tax-levying authority.

It is of importance, too, to remember that, though competition may, after the lapse of a sufficient period of time, effect the transfer of tax burdens to such classes as may be indicated in discussions resembling the foregoing, the burden may, for a long period, be placed elsewhere. It is by no means a matter of indifference how the first impact of a tax may be arranged. Even the final incidence is not independent of the first impact, on account of the imperfections of competition, and the economic weakness of some classes which is one of the causes of such failures to arrive at perfect competition. The general maxim, that taxes which have been for a long time in operation have the burdens resulting from them distributed with a close approach to equity among different classes, is worthy of particular attention. It is based on the view that, if any industry be specially favoured or penalised by the working of the tax, there will be brought about a transfer of productive power to the favoured industry, or from the penalised one, making competition keener in the one, less acute in the other, and thus proportioning the remuneration in each to the efforts and abstinences imposed by each. This view is certainly a sound one, though the maxim has not a universal applicability.

To illustrate the imperfection and slowness with which readjustment of burdens occurs, let us briefly consider some features of a tax on houses proportioned to their annual rental value. If the tax be originally imposed on the owners, it will reduce the profits of house-proprietorship, and check the increase of rentable property: it will, further, stimulate to the reduction of expenditure in construction, in order to meet those who are more willing to accept a house offering less convenience than able to pay increased rent. In so far, too, as house building is checked, the demand for suitable sites will be reduced, and the owners of such sites may be compelled to accept a lower price for them. The actual owners of houses already built will have a burden placed on them, inasmuch as, for the moment, demand for houses and supply of houses are unchanged, so that rents cannot be at once raised, and thus the net revenue yielded by the houses is reduced by the tax. Whether to hold or to sell, the houses are worth less. The burden is capitalised, and if owners sell, the new owner will only pay a price which relieves him of burden, and makes his investment yield a net return on a level with other investments involving corresponding risk and trouble.

If the above results are to be avoided, it must be possible to raise rents somewhat without losing tenants. But many tenants will rather accept a diminished accommodation than pay higher rent, and thus the raising of rent may mean driving tenants to less convenient houses, or, where that is possible, to districts where the tax does not apply. If such removal to other districts be easy, the landlord's opportunity to recoup himself by raising rents will be practically annulled. In course of time, as the supply of houses in the taxed district comes to be adjusted to the new conditions, rents may rise and afford an opportunity to landlords to recoup themselves for the taxes they are then paying. This effect will be slight if removal to an untaxed, or more lightly taxed, district be easy. Another point of importance is that, as many houses are held on leases for a period of years, the opportunity for readjusting the rent does not offer at once, and thus the burden cannot be transferred to the occupier of the premises till his lease falls to be renewed, at least.

Suppose, however, that the tax is levied directly on the occupier. To transfer the burden to the owner of the house a new agreement for rent must be made. Here we may emphasise a point not mentioned above. A tenant may find the inconvenience and expense of moving so great, that, though equally satisfactory accommodation were available at a price which would relieve him of the tax burden, he would prefer to stay where he is and bear the tax. When other circumstances lead him to move to another house, he will select that other house with the tax in view, and may be able to contract with his new landlord on terms practically transferring the burden to him. This will be the more likely if a more lightly taxed district offer alternative accommodation. Inasmuch as some tenants are moving at any particular period, the influence of the competition of the houses of that other district will be in operation all the time, but circumstances hinder the perfect establishment of a market price for house-hire, and thus the incidence of a tax such as that under consideration is very greatly affected, for a considerable time, by its original impact.

In the case of commodities readily marketable, the transference of the tax burden is much easier and simpler. The competition of dealers is active. If any possess stocks of a commodity newly taxed, there is no compulsion arising out of competition which can prevent them from offering these goods at the same price as those which competitors must ask for new supplies, on which the tax must be, or has been, paid. Thus the consumer finds that the whole supply available is burdened with the tax as well as its expenses of production. In so far as the rise of price reduces demand, a modification may result. If cost of production per unit be unchanged for a reduced scale of output, the effect of the tax is to lead to a rise of price equal to the tax, and a reduction of output such as to adjust the supply to the diminished demand which results from the rise of price. If the cost per unit fall with a reduction of the scale of production, the price will not be raised to the full extent of the tax. The supply will he reduced so as to correspond with the reduced demand, and the economy in production which results will help to cover the tax, the remainder being covered by the rise in price. Should the taxed commodity be one of which the cost per unit falls as the scale of production is enlarged, the resulting effect on price will depend on how the representative producer (see p. 60) is affected by the tax. It is conceivable that the tax may be such a disadvantage to small producers that it results in enlarging the scale of production of the representative firm. In that event the effect on price would be that of the case last considered. If the representative firm maintain the same scale of production after the taxation of its product as before, the case reproduces the conditions of the constant cost instance. If the output of the representative firm be reduced, and therefore rendered more costly to produce, the rise in price must be sufficient to cover this loss of economy as well as the amount of the tax.

If we are dealing with monopoly, the form of the taxation adopted will affect the result. A tax on the net monopoly revenue, proportioned to its amount, will be like a tax on rent, not capable of transference. A tax on gross revenue, or on product, however, would afford opportunity for readjusting the amount of product to the new conditions of expenses of operation. The maximum net revenue, after the imposition of the tax, might correspond either to a reduced or to an enlarged scale of supply. If the supply conform to conditions of decreasing costs, the results on price have already been noted in discussing the case of the representative firm. If the conditions are those of increasing costs, the new maximum net revenue will correspond to a decreased scale of supply, with results in price already discussed.

Connected with the subject of taxation is that of national debts, since a government may frequently choose between meeting expenditures by increase of present taxation or by borrowing. Some have criticised the latter method, on the ground that they conceive it to involve placing a burden, both on the generation which provides the borrowed funds, and on that which repays them. For the purpose of examining the case, we shall assume that the question does not concern borrowing abroad. It is clear that the criticism quoted cannot apply to that case.

In the case of raising funds by taxation, the existing citizens are required to submit to sacrifice of the amount contributed by each, and that sacrifice is definite and final. In the case of raising funds by loan, the existing citizens submit to the present sacrifice, but they receive a claim on the public funds, that is, on funds contributed partly by others than those who have lent to the state, and contributed in different proportions from those in which the loaned funds were provided by their lenders. If the funds raised by loan could be secured by a levy on tax-payers, on the taxing principle of equal sacrifice, the reasons for procuring them in that way would be stronger than they usually are. Loans are, in fact, commonly resorted to to avoid making taxation so heavy as to become oppressive or unpopular, and to avoid the adoption of forms of taxation which are markedly not in accord with the principles of equity as applied to taxation. If the expenditure for which the funds are needed is one of general benefit to all, the burden which it imposes should be distributed according to these principles of equity. If, for example, the funds are required for war expenditure, they may exceed what can be raised by the use of equitably distributed taxation, while it may be claimed that the burden ought not to be entirely borne by those who actually carry out the warlike operations. The assumption, that future generations will benefit so largely by wars of the present, as to justify requiring them to pay their capital cost, is one which must be made with the greatest reserve. We are concerned here, however, with the comparison of the incidence of the burdens of such expenditure when the funds are raised by taxes or loans respectively.

If raised by loan, the funds are presumably procured from sources where the least sacrifice is involved in procuring them. The less productive of industrial opportunities will be left undeveloped, while the funds are employed by the government. At the same time, when industrial or commercial enterprise promises a greater net return than subscribing to the loan, the capital will not be kept from those enterprises and handed over to the government. So long as the loan remains unpaid, the interest must be provided from tax funds, if the loan be expended for purposes not yielding a direct revenue, as in the case of war expenditure. These taxes can be so distributed as to bear equitably on all classes, and the same is true of the taxes whose proceeds provide the means for the gradual repayment of the loan. This repayment, moreover, will generally be postponed till the national revenues suffice for the purpose without resort to excessive amounts, or inequitable distribution, of taxation.

If the funds were raised by immediate taxes, the distribution of the burden might not be able to be made equitably. Taxation of so great an amount might be required, that practicable methods of taxation would necessarily involve undue recourse to burdens on special classes. Further, taxation means compulsory payments, and the funds might be drawn from employments where they could ill be spared. The choice of the least inconvenient sources of supply would be excluded, for, though tax-payers might conceivably use the same funds as might be subscribed to a loan, that would involve borrowing by some tax-payers from others, and this borrowing would probably not be able to be carried out on such terms as borrowing by the government, if it were possible at all.

A loan to provide for non-revenue-yielding expenditure may, then, be necessary if the raising of the funds by taxation would involve an extreme tax pressure, and especially if it would involve resort to unequally distributed taxation. To justify it, not merely is this condition required, but also the condition that the generation which spends the borrowed funds is not so largely interested in the results as to require it, in justice, to bear the whole burden of providing them. The ease of meeting expenditure by means of loans leads to the undertaking of not a few outlays, which would be seen not to give a satisfactory return on their cost if the whole burden of that cost had to be met by immediate additions to current taxation, sufficient to cover the cost in a very short term of years. It cannot be denied, however, that capital expenditure is sometimes as wise for communities as it is for individuals or corporations.

# APPENDIX

## PROBLEMS TREATED ALGEBRAICALLY AND DIAGRAMMATICALLY

# APPENDIX

IN dealing with the relation of the amount of a commodity for which there is a demand at any particular price, and that price, reference was made on p. 25 to what constitutes a complete knowledge of the state of demand. Expressing the matter in a symbolic form, let $x$ be the number of units of a commodity for which there is a demand when the price is measured by $y$ units of purchasing power. Then, corresponding to each possible value of $y$, there will be a definite value of $x$. A complete knowledge of demand would comprise a knowledge of all such pairs of values of $x$ and $y$. The changes in the value of $x$ which result from small changes in the value of $y$ are, at any rate when the demand of a large market is under consideration, small. The fact that the value of $x$ is in some way connected with the value of $y$ can be expressed in the form

$$y=f(x) \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad \text{(i)}$$

If the amount demanded increased in precise proportion to the fall of price from some definite level, the equation (i) would take the form

$$y=c-mx.$$

As a rule, however, we cannot assume that the relation is so simple as this. Nor can we obtain exact knowledge of the form of the function indicated by $f(x)$ in equation (i). If we had that knowledge, the complete expression of the state of demand, referred to above, would be provided.

Though unable to state the form of the relation between $y$ and $x$ with precision, we can state two things about the equation (i). For each value of one of the variables there is only one real value of the other, to each $x$ there is only one appropriate value of $y$, and *vice versâ*. Further, the larger $x$ is, the smaller will $y$ be. The value of $f(x)$ decreases as $x$ increases. In the language of the Differential Calculus, $\frac{dy}{dx}$ or $f^1(x)$ is negative for all values of $x$. This is the expression of the principle enunciated in the middle of p. 22, and that principle is perhaps more clearly expressed in this symbolic language than in the more cumbrous language of ordinary intercourse.

We may express these conceptions in a diagrammatic form. Take a point P, and two lines O$x$, O$y$, at right angles to each other, to which its position is referred. Draw PN perpendicular to O$x$. Then, if ON$=x$, PN$=y$, the position of P expresses at once a value of $x$ and a value of $y$. It shows the value of $y$ which corresponds to a given value of $x$, or the value of $x$ which corresponds to a given value of $y$. The relation between $x$ and $y$ which is expressed in equation (i) may be expressed in diagrammatic form by stating that P is always found on some definite line, as D*d*. If we knew the form of the function $f(x)$, we should know the shape of the curve D*d*. They are two ways of expressing the same thing. Clearly, if we knew the shape of the curve D*d* throughout its length, we should know all about the state of demand symbolised by it. What we do know is that no vertical line like NP cuts D*d* more than once, and that the line D*d* falls as we pass from left to right along it. This is the geometric expression of what is stated above in algebraic symbols.

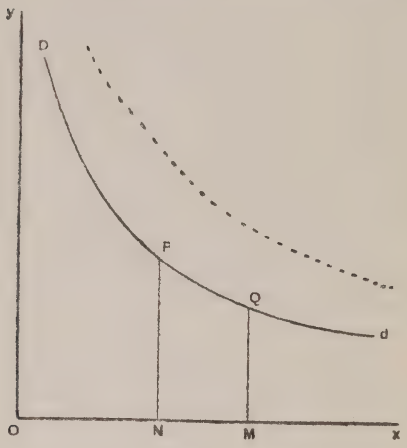

Fig. (i)

The actual knowledge of the shapes of such curves as D*d*, which are called "demand curves," is not detailed or extensive. Careful gathering of statistics may afford knowledge of the shapes of such curves in the immediate neighbourhood of the points on them which correspond to actual prices and supplies. Not much is, or is likely to be, known of their shapes at parts far removed from these points.

The two kinds of change in demand, referred to on p. 29, can be distinguished with great clearness by means of our diagram. Thus, a fall of price from that represented by PN in Fig. (i) to that represented by QM, involves an increase of the quantity demanded. ON units were demanded at the price PN, OM units are demanded at the price QM. The increase in the quantity demanded, while the general relation of the intensity of demand to the degree of plenty of the supply remains unchanged, that is to say, while the same demand curve continues to represent the condition of the market, is what is called an extension of demand on p. 30.

A true change of demand occurs when the demand curve has to be replaced by another. Thus, if the curve D*d* in Fig. (i) be replaced by the broken-line curve on the diagram, an increase of demand is indicated. The curve D*d* is moved upwards, with more or less of change of shape, in taking the position of the broken line. Each point on the broken line is above the point where its ordinate cuts D*d*. The point on the broken line which is as high above O*x* as P is, lies farther out than P from O*y*. An increase of demand, in the sense of the statement of p. 30, is what corresponds to the replacement of a demand curve by one lying above it, as in replacing the full-line curve D*d* in Fig. (i) by the broken-line curve. The inverse change will represent a decrease of demand.

The fundamental contrast between the two kinds of change, which are covered by the carelessly used phrases about increase or decrease of demand, will be clear in the light of their diagrammatic representations.

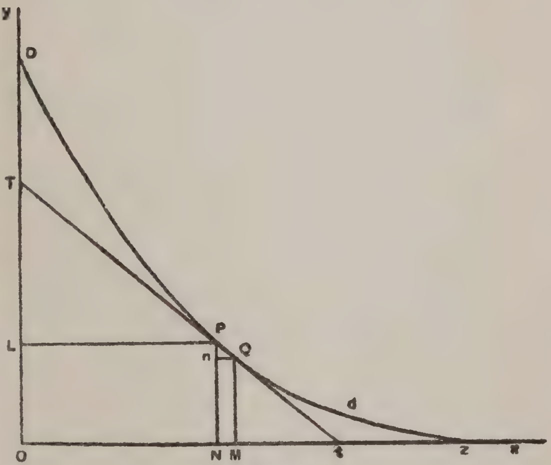

Fig. (ii)

If we take two points, P, Q, near together on a demand curve D*d*, as in Fig. (ii), and draw the ordinates PN, QM, then PN, QM represent the valuations, per unit, of the commodity, whose demand is in question, according as the supply is ON units or OM units. The utility of the amount NM, added to the supply ON, is something less than PN × NM, and something greater than QM × NM. If N and M be very near to each other, these two amounts approach to equality. The utility of the amount of supply represented by NM is represented by a rectangle on NM as base, and whose height is between PN and QM. The area between any two ordinates of the curve, though far apart, as PN and QM in Fig. (i), may be regarded as built up of narrow rectangles such as that just described, and of varying heights. In the limit, the utility of the supply represented by NM in Fig. (i) (added to a supply represented by ON) will be represented by the area between the curve PQ, the ordinates PN and QM, and the part of O$x$ between N and M. If the curve could be carried on to cut O$y$, the total utility of the supply ON would be represented by the area between O$y$, ON, NP and the curve from P to the point of section with O$y$. The marginal utility of the same supply is measured by the demand price PN. Thus the total utility and marginal utility are contrasted as area and line. The marginal utility is the rate at which total utility increases when supply begins to increase from a given amount.

To the right, the demand curve may fall very near to O$x$. At points corresponding to very large supplies, then, the marginal utility may be very small. If D$d$ cut O$x$, as at $z$ in Fig. (ii), the marginal utility of a supply O$z$ vanishes. But the total utility of that supply is represented by the area between O$x$, O$y$ and the curve, and may be very great. It is certainly greater than for any supply smaller than O$z$. Large utility and small exchange-value, then, are by no means inconsistent.

When the supply reaches the amount corresponding to O$z$ in Fig. (ii), absolute satiety of demand for the commodity in question is reached (see p. 24). No other meaning than this can be reasonably assigned to an unqualified statement that demand is saturated or that satiety has been reached.

A relative satiety, however, is reached when a supply of some other commodity is preferred to further supplies of the same commodity. Thus, in Fig. (iii), the intensity of demand for two commodities may be represented by the two curves $D_1d_1$ and $D_2d_2$. So long as PN is greater than $OD_2$, the first commodity alone will be demanded, if PN represent the lowest grade of utility securable with the available means. When, however, we reach a grade of utility such as QM, where QR, parallel to $Ox$, cuts $D_2d_2$, some supplies of the second commodity will be demanded. In the former case, when satisfactions had to be as great as PN to be worth securing, only the first commodity could afford them. In the latter case, when utilities measured by QM are worth securing, supplies measured by OM of the first and OL of the second commodity are desired. To divert the means devoted to procuring the supply OL of the second commodity, and extend the amount of the first secured, would be to secure utilities, whose measure is less than QM, by the sacrifice of some whose measure is greater than RL, that is, greater than QM.

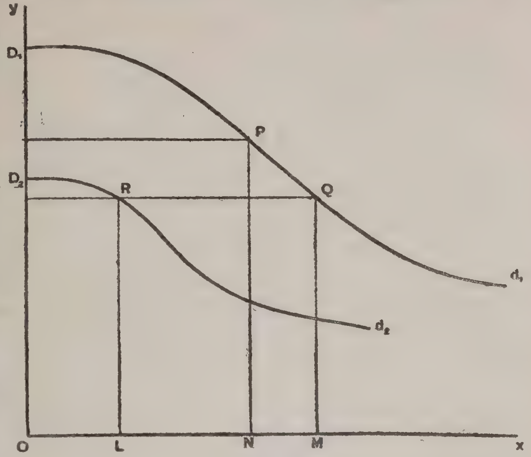

Fig. (iii)

The fact that there are very many different kinds of satisfaction which can be procured easily accounts for the fact that there are few lines of consumption which are pushed to the point of absolute satiety. There is no need to press on along one demand curve $D_1d_1$ to the point where it cuts $Ox$ so long as there is some other demand curve, relating to commodities procurable and appreciated, some part of which lies above $Ox$, and the desires corresponding to which are not yet satisfied.

Incidentally it may be noted that, if means be distributed with strict regard to the utilities secured, the level of marginal utility procured in every line of consumption will be the same. Each commodity will be enjoyed in such quantity as to have a marginal utility not less than that of each of the other commodities secured by the same person.

Returning to the consideration of Fig. (ii), we may give expression to the conception of elasticity of demand dealt with on p. 26. The line PQ, when P, Q, approach each other indefinitely, takes the position of the tangent to the demand curve at the point P. Let this tangent cut O$y$ at the point T, and draw PL parallel to O$x$.

The elasticity of demand at P is defined as the ratio of $\frac{\mathrm{NM}}{\mathrm{ON}}$ to $\frac{\mathrm{P}n}{\mathrm{PN}}$, where Q$n$ is parallel to NM. That is to say, the elasticity of demand is

$$\frac{\mathrm{Q}n}{\mathrm{PL}}\times\frac{\mathrm{PN}}{\mathrm{P}n}=\frac{\mathrm{PN}}{\mathrm{PL}}\times\frac{\mathrm{Q}n}{\mathrm{P}n}=\frac{\mathrm{PN}}{\mathrm{PL}}\times\frac{\mathrm{PL}}{\mathrm{TL}}=\frac{\mathrm{PN}}{\mathrm{TL}},$$

or the ratio of OL to LT measures the elasticity of demand at P. If TP be produced to meet O$x$ in $t$, this ratio is equal to that of $t$P to PT.

In terms of the symbolism of equation (i) this ratio is that of $f(x)$ to $x.f^1(x)$. The consideration of changes in the elasticity of the demand for different commodities, as supply changes, referred to on p. 26, may afford useful hints in the drawing of suitably-shaped demand curves.

Just as the relation of amount demanded and the corresponding price is expressed in equation (i), so can the variation of the amount of supply with corresponding supply price be expressed in a similar equation

$$y=\varphi(x)\quad.\quad.\quad.\quad.\quad.\quad.\quad.\quad.\quad\text{(ii)}$$

In regard to this equation, however, we cannot lay down any such universal rule as that relating to the amount demanded and its price. To represent a supply price per unit which is the same whatever the scale of production, the equation becomes

$$y=c,$$

$c$ being independent of $x$.

To represent a supply subject to the conditions of increasing cost or decreasing returns, we must have $y$ increasing as $x$ increases, while, in the case of increasing returns, $y$ decreases as $x$ increases. In the former case $\varphi^1(x)$ is positive, in the latter negative. In not a few cases, $\varphi^1(x)$ will be positive for some values of $x$, negative for other values. As with demand, so also with supply, there may be drawn a curve, to represent the relation of $x$ to $y$ which is stated in algebraic form in equation (ii). In Fig. (iv) the curve S$s$ is drawn representing conditions of decreasing returns. On the same diagram, a demand curve D$d$ is drawn. If these curves present the conditions of supply and of demand respectively for the same commodity, and if they intersect in P, and an ordinate PN be drawn, the price PN and the supply ON correspond to an equilibrium of demand and supply (*cf.* pp. 50, 51). If *pqn* and *trm* be ordinates near to PN, cutting the demand curve at *p* and *r* respectively, and the supply curve at *q* and *t*, the argument of p. 50 may be presented briefly as follows. If the supply be O*n*, less than ON, the supply price for that amount is *qn*, the demand price for that amount is *pn*. Thus the demand price is greater than the supply price, and supply tends to expand. If the supply be O*m*, greater than ON, the supply price for that amount is *tm*, and the demand price for that amount is *rm*, which is less than *tm*. Thus the supply of any amount greater than ON is unprofitable, and supply tends to decrease. With a supply ON, the supply price is equal to the demand price, and there is no stimulus either to increase or to decrease the scale of production.

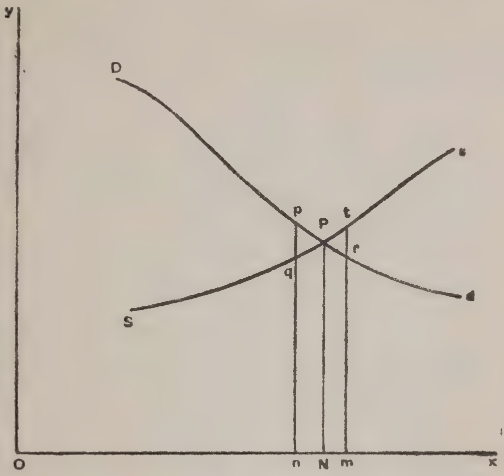

Fig. (iv)

The above argument will hold whenever the supply curve is below the demand curve to the left of P, its intersection with that curve, and above it to the right of that point. It is argued on pp. 56 and 57 that such a point of intersection will always occur when a supply of a commodity is economically possible. The consideration of an intersection of the opposite kind, referred to at the foot of p. 56, may be left as an exercise to the reader.

The intersection of the two curves may be presented in algebraic form by combining the two equations (i) and (ii). If demand price and supply price be equal, we must have

$$f(x) = \varphi(x) \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad \text{(iii)}$$

an equation from which $x$, the appropriate scale of supply, may be determined, and then the corresponding $y$ may be found from either of the equations (i) and (ii).

The above deals with the equilibrium of aggregate supply and demand. A brief consideration of the relation of individual producers to the aggregate supply will be of interest.

Let us take the case of three producers for illustration. The method may be applied to any number whatever. Let the supply equations of the individual producers be

$$y=\varphi_1(x),\ y=\varphi_2(x),\ y=\varphi_3(x) \quad . \quad . \quad . \quad \text{(iv)}$$

Let the amounts supplied at the price $y$ be $x_1$, $x_2$, $x_3$, respectively in the case of these three. The supply equations may be solved in the form

$$x_1=F_1(y),\ x_2=F_2(y),\ x_3=F_3(y) \quad . \quad . \quad \text{(v)}$$

The aggregate supply $x=x_1+x_2+x_3$, or

$$x=F_1(y)+F_2(y)+F_3(y) \quad . \quad . \quad . \quad . \quad \text{(vi)}$$

This equation may, in turn, be solved for $y$ in terms of $x$, yielding the result

$$y=\varphi(x),$$

the aggregate-supply equation, which is to be taken with the demand equation to determine the equilibrium. When, by means of the equations of aggregate supply and aggregate demand, the equilibrium value of $y$ has been determined, the values of $x_1$, $x_2$, $x_3$ are given by the equations (v), that is, the individual contributions of the separate producers are determined.

It is clear that the method may be extended to any number of producers, and may be applied to the demand side of the problem as well as to the supply side, that is, a composite demand may be handled as well as a supply by many competitors. It will be observed that the price $y$ secured by each producer has been taken as the same, in accordance with the assumption of free competition in open market. Where the separate producers supply separate markets, they have independent demand equations to be associated with their individual supply equations.

In Fig. (v), the above is presented in the diagrammatic form. The curves $S_1s_1$, $S_2s_2$, $S_3s_3$ are taken to represent the supply conditions of the three producers. Across the three a line $Lp_1p_2p_3P$ is drawn parallel to $Ox$, cutting the three curves in $p_1$, $p_2$, $p_3$ respectively. On this line a point P is taken such that $\mathrm{LP}=\mathrm{L}p_1+\mathrm{L}p_2+\mathrm{L}p_3$. The points P, determined in this way, by drawing lines across the diagram at different levels, trace out the aggregate-supply curve S*s*. When the point of equilibrium is determined by combining S*s* with the demand curve, the separate supplies of the individual producers are determinable. If P were the point of equilibrium, OL would be the price, LP the aggregate supply at the equilibrium. The individual producers would contribute amounts $\mathrm{L}p_1$, $\mathrm{L}p_2$, $\mathrm{L}p_3$ respectively to this supply. As the diagram is drawn, the supply curves correspond to decreasing returns. It will be noticed that OL represents, not merely the marginal supply price for the aggregate supply, but also the marginal supply price for each of the individual producers.

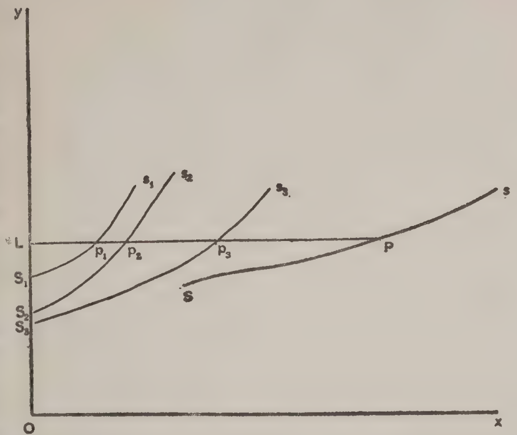

Fig. (v)

The problems of demand and supply may be represented diagrammatically by a somewhat different construction, which is especially useful in some important cases. We may take the ordinate of our curves to represent, not the demand price or the supply price *per unit* which corresponds to a given amount of commodity demanded or supplied, but the aggregate price paid for that amount. In place of representing the curve $y=f(x)$, we may represent the curve $y=x \,.\, f(x)$, and so also for the supply curve. This mode of construction is illustrated in Fig (vi). The curves start from O in this case, and their intersection P again corresponds to equilibrium. Since the combination of $y=x \,.\, f(x)$ and $y=x \,.\, \varphi(x)$ gives for the common values the equation

$$x \,.\, f(x)=x \,.\, \varphi(x),$$

it is obvious that the value of $x$, the scale of supply which corresponds to equilibrium, is not altered by the change of mode of representation. $OrpP$ is the demand curve, and $OqP$ the supply curve. At the point of intersection, P, the amount supplied is ON, and its total price, which is necessary and sufficient to satisfy producers, is NP. So also NP represents the aggregate sum which consumers are willing to offer for the amount ON. The price per unit is represented by the fraction $\frac{PN}{ON}$, or the trigonometrical tangent of the angle PON. We may say, in fact, that the slope of OP represents the price per unit.

This form of representation in a diagram is adapted to the problem of direct exchange of commodity for commodity. Draw $pqn$ an ordinate cutting the curves at $p$ and $q$, and $qrm$ parallel to $Ox$, cutting the curves at $q$ and $r$ as in the figure. Then we may regard each curve in turn as a demand or supply curve. Each is a supply curve for one commodity, a demand curve for the commodity to be secured in exchange. If the upper curve be supposed to relate to a commodity A, the lower to a commodity B, then holders of A are willing to give an amount $np$ of their goods for an amount $On$ of B, while holders of B are willing to accept an amount $nq$ of A in exchange for $On$ of B. Alternatively, holders of A are willing to accept an amount $mr$ of B in exchange for $Om$ of A, while holders of B are willing to give an amount $mq$ of B for $Om$ of A. Thus there is an opportunity for advantage to both in selecting some rate of exchange intermediate between $nq$ and $np$ of A given for $On$ of B, or intermediate between $mr$ and $mq$ of B given for $Om$ of A. The enlargement of the scale of exchanges to

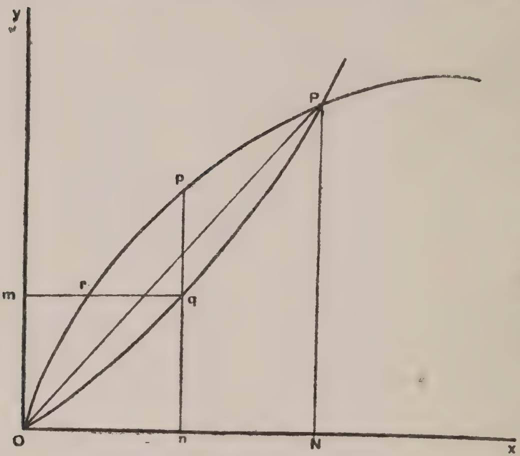

Fig. (vi)

ON of B exchanged for PN of A brings us to a point where the range of indeterminateness in the terms of exchange has vanished. The indeterminateness is seen to belong to the stage of comparatively undeveloped exchange.

Hindrances to exchange modify the shape of the curves. Thus, if the diagram of Fig. (vi) be supposed to represent the conditions of a free exchange, and this is modified by the imposition of a charge on the delivery of B without any change in the services rendered to holders of either A or B, the new conditions may be represented by replacing the upper curve by another, derived from it by moving each point of it horizontally to the right. The extent of the movement must be such as to represent an amount of the commodity B sufficient to discharge the amount of the levy on delivery, and to leave the same net amount as before in the hands of its purchaser. Substantially, the upper curve is swung downwards to the right, its shape being modified, if necessary, in addition, and its intersection with the lower curve will give a position of OP lower than before. As the curves stand in the figure, the extent of the exchanges will be diminished, and a change in the rate of exchange will result, so that holders of B will give more of their commodity for each unit of A.

Fig. (vii) represents the conditions for forms of the curves which bend continuously in one direction throughout. A point $q$ on the upper curve gives a point $p$ on the modified curve, $qp$ representing the delivery charge in question. Draw the ordinates PN, $pn$, $qm$. Then, if OP represent the modified position of the upper curve, the new equilibrium is attained at a rate of exchange, O$n$ of B

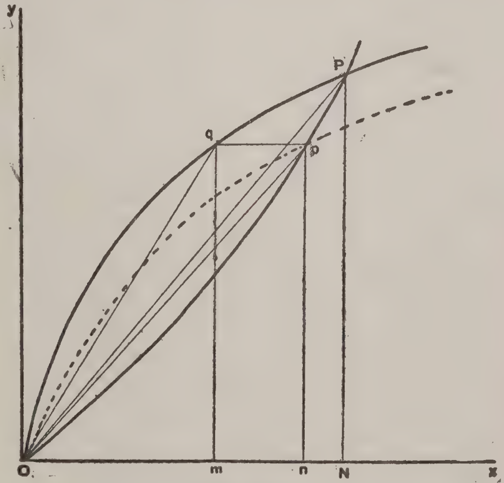

Fig. (vii)

for *pn* of A. But holders of A have to pay an amount *pq* or *mn* of B as delivery charge, and hence receive only O*m* for their own use. Thus the rate of exchange moves unfavourably for each of the parties to the exchange. Holders of B have to accept a rate represented by the slope of O*p* in place of OP, while holders of A have to accept a rate represented by the slope of O*q* in place of OP. The burden of the obstacle to the exchange is thus divided between the two parties to the exchange. Special forms of the curves in the neighbourhood of P may result in some modification of this general statement. Thus, it may be possible for one of the exchangers to put the whole disadvantage on the other, or it may even be possible to derive advantage through such a change, putting on the other party more than the burden of the hindrance introduced. To attain such results special conditions need to be fulfilled, and the study of the shapes which the curves would need to have, and what would be implied in giving them these shapes, may be taken as a profitable exercise by the student. Under ordinary conditions, the diagram suggests the probable outcome of the imposition of new burdens on exchange. The considerations here advanced are of special importance in connection with international trade, and the diagrams of Figs. (vi) and (vii) may be usefully studied in connection with Chap. XVI.

In connection with problems of taxation, the preceding discussion might be amplified, or we may revert to the earlier diagrams for help in presenting the conditions of these problems. Take the case of a tax imposed on a commodity used in a particular line of production, or of a royalty on a process of manufacture. Let D*d* be the demand curve for the commodity ultimately produced, S*s* the supply curve before the tax is imposed. Then the

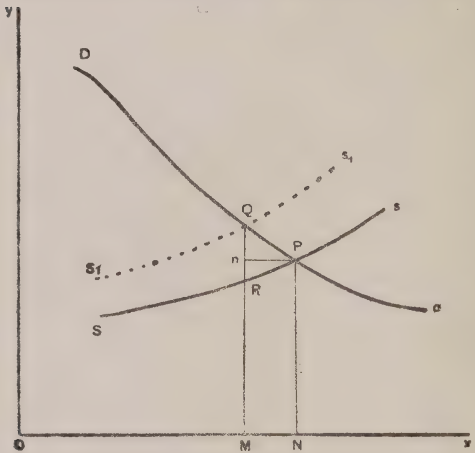

Fig. (viii)

result of the tax is to increase the cost of production, and to raise the supply curve. Let the broken-line curve $S_1s_1$ represent the new supply curve. Then the equilibrium position is changed from P, where $Ss$ cuts $Dd$, to Q, where $S_1s_1$ cuts $Dd$. The new price is QM, which is greater than PN. If $Pn$, parallel to $Ox$, cut the ordinate QRM in $n$, the rise of price is $Qn$, while the tax adds QR to the marginal cost of production. The scale of production is reduced, and, as the figure corresponds to decreasing returns, that results in reduced marginal cost. The burden of the tax is not wholly felt in the rise of price, being partly spent in offsetting the economy arising from the reduction of the scale of output.

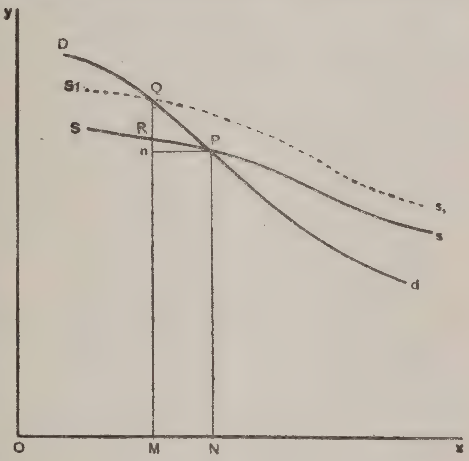

Fig. (ix)

If the supply were produced under conditions of constant cost, the points R and $n$ would coincide, and the whole of the burden of the tax would be felt in the price. For the case of increasing returns, Fig. (ix) is drawn. Here the scale of production is changed from ON to OM. Some of the economies of a large-scale supply are lost, and the supply price, apart from the tax, rises from PN to MR. To this increase of cost of production, the tax falls to be added, and the total increase of price is $nQ$. In using the result thus obtained, it is important to observe that its validity depends on the propriety of representing by MR the supply price for an amount OM, to which the supply is supposed reduced after having been equal to ON. The value of MR appropriate to the case will probably be less than that which might have corresponded to the output OM when that scale of output had not been surpassed. As it is not difficult to conceive, however, of a forced reduction of the scale of output which involves some sacrifice of the advantages of production on a large scale, the problem presented is not merely of abstract interest, as completing the range of theoretic possibilities.

The preceding brief discussion of taxes was based on an assumption of the existence of competition between producers. We next turn to the consideration of the problem of monopoly. To present this problem diagrammatically, we select the mode of representation adopted in Figs. (vi) and (vii). In Fig. (x), the curve O*pr*P is the demand curve for a commodity whose supply curve is O*pt*P. The supply curve is drawn so as to represent costs exceeding the value of the product for small scales of supply, and increasing returns both in the earlier part of the curve and also near P. Let ordinates such as *rt*QM be drawn across the two curves, and let MQ be taken equal to *tr* the intercept on the ordinate between the two curves. The line traced out by the points Q, thus found, may be called the monopoly-profit curve. For a supply OM the costs are M*t*, while the demand price is M*r*. Thus, if a producer can control the whole supply, and restrict it to OM, he can secure the difference MQ between his costs and the value of the total output. As shown in Chap. V., the object of the monopolist being assumed to be the securing of the greatest possible net returns, we must find the volume of supply which maximises the net return in order to have the position to which the market tends under monopoly of supply. Thus we need to find the greatest value of MQ, or the highest point on the curve traced out by Q. This is easily found. If Q be that point, the supply under monopoly will be OM, the price being $\frac{rM}{OM}$ per unit.

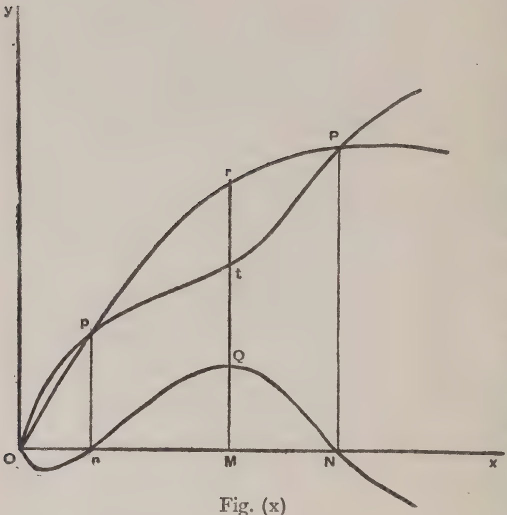

Fig. (x)

If a tax be imposed on the monopoly profit, either as a specific tax, or a percentage of that profit, the curve $n$QN is lowered, but the position of its highest point is not moved to right or to left. Thus, such a tax does not stimulate any change in supply or price.

Taxes which modify the shape of the cost curve O$pt$P, may so modify the shape of the monopoly-profit curve $n$QN as to move the point Q either to the right or to the left, thus changing the scale of supply, and consequently causing a change in price. If Q were made to move to the left, the supply would be decreased and the price per unit increased. If, on the other hand, Q moved to the right, the supply would be increased, and the price per unit would be reduced. We do not propose to examine here the conditions which might give rise to either of such varieties of change. The student may find a useful exercise in tracing out the consequences of taxes proportional to cost, to output, or varied in other definite ways.

If the problem of monopoly be treated algebraically, we have as data that $f(x)$ is the demand price per unit, and $\varphi(x)$ the cost per unit, of a quantity $x$. The monopoly profit is therefore $x\{f(x)-\varphi(x)\}$, and if this is to be made a maximum, the value of $x$ must be that found from the equation

$$f(x)-\varphi(x)+x\{f^1(x)-\varphi^1(x)\}=0.$$

This expresses the condition that the tangents at $r$ and $t$ in Fig. (x) are parallel. This is another way of stating that Q is the highest point of the curve $n$QN.

In dealing with the problem of rent, we may employ diagrams of the type of those of Figs. (i) and (ii), constructed so that the additions to product, resulting from successive additions to expenditure in cultivation, are represented by the ordinates of a curve whose abscissæ represent the expenditures in question, just as, in those figures, the ordinates represent the utilities of successive additions to a supply, the amount of which is represented by the corresponding abscissæ. Such diagrams are very useful, and are given in many text-books. A second mode of representation, corresponding rather to the diagrams of Figs. (vi) and (vii), offers some features of advantage, and students who have familiarised themselves with one mode of representation should find little difficulty, and some gain, in making comparisons between the two.

In Fig. (xi), let the curve be drawn so that, taking any point on it, P, and drawing the ordinate PN, ON may represent the expenditure of labour and capital which, on a given area of land, returns an amount of produce represented by PN in a normal year. The expenditure may, if desired, be measured by the money price required to secure the services of labour and capital to the extent needed. For some purposes, too, the produce may be measured by its money value, but for some applications of the diagram we need to conceive of it as measured in terms of quantity.

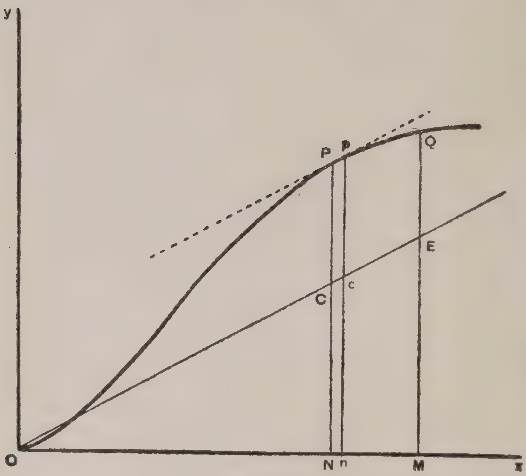

Fig. (xi)

On NP take a point C such that NC represents the amount of produce whose market value is sufficient to recompense the expenditure ON. Draw the straight line OCE. If Q be another point on the curve, and the ordinate QM intersect OC in E, ME will represent the amount of produce needed to recompense the expenditure OM. The cultivator has a surplus CP when his outlay is ON, a surplus EQ when his outlay is OM. In order that the surplus may be the greatest possible, we must find the point on the curve at which the tangent is parallel to OCE. If that point be P, then CP is greater than EQ whatever position Q may have. The expenditure ON will be that giving the greatest excess of return over outlay. If the expenditure ON include an adequate remuneration to the cultivator, the amount CP will be the most that can profitably be given for the hire of the land, and a keen competition for tenancies will assign no less than this to the owner (*cf.* pp. 100–102).

If the curve be drawn so that PN represents the value of the produce secured by an expenditure ON, CN will be equal to ON in length, and CON will be half a right angle.

If, however, PN represent the amount of the produce yielded by the expenditure ON, the shape of the curve is not dependent on the price of produce. Variation of the price of produce causes the slope of the line OCE to be changed, and consequently changes the position of P and the length of CP, that is to say, modifies the most appropriate intensity of cultivation and the rent-yielding power of the land. The relation of price of produce to rent is thus one in which, though the former has a great influence on the latter, the converse does not hold (*cf.* p. 110). If prices fall, OCE swings upward towards O$y$, and P moves to the left in consequence, CP decreasing in length. If prices rise, OCE swings downward towards O$x$, P moves to the right, and CP increases in length. These results depend on the assumption that the curve, in the neighbourhood of P, has its concave side facing towards O and the line OCE. If the proportion of PN to ON decreases as P moves to the right, and increases as P moves to the left, in the neighbourhood of the point indicated by making CP a maximum as above, this will be true. These conditions simply amount to the assumption that diminishing returns have become operative before the stage of cultivation corresponding to the position of P is reached, and continue to hold for somewhat higher degrees of intensity of cultivation. It involves no assumption as to the shape of the curve near O.

If $np$ be an ordinate very close to NP, the tangent at P is the line P$p$. Hence, if $np$ cut OCE in $c$, $cp$ is equal to CP. The product $np$ is greater than the product NP, but the whole of the excess is comprised in the amount by which $nc$ exceeds NC. The expenditure O$n$ requires the product $nc$ to compensate it. The surplus $cp$ is thus not affected. The additional expenditure N$n$ requires the entire addition which it secures to the produce to meet the addition to outlay. The addition to the produce is the marginal product, and its cost is the additional outlay N$n$. Thus the cost of production of the marginal output is equal to its value. Changes in the shape of the curve may be made, modifying the amount of the surplus, *i.e.* the rent-yielding power of the land, and altering the intensity of cultivation, without affecting the cost of production of the marginal output.

If the produce curve of Fig. (xi) be expressed by the equation

$$y=f(x),$$

the value of $y$ which corresponds to a given value of $x$ is the amount of the produce which results from the application of $x$ units of outlay to a given area of land. The unit of outlay may, as stated before, be conceived of as a definite number of days of labour by one man aided by a given amount of capital, or as the labour, etc., purchaseable by a definite pecuniary outlay, that is, we may conceive of the outlay as effort or under the form of money outlay. The expression for the rent-yielding capacity of the land is

$$f(x)-xf^1(x),$$

$x$ having the value corresponding to the position of N in Fig. (xi), or, to express the same fact otherwise, $f^1(x)$ having the value CN/ON, the tangent of the angle made by OCE with O$x$.

If we conceive of the outlay as an outlay of actual effort and sacrifice, labour and capital, in amount measured by the length of the abscissa of any point on the produce curve, then the rate at which further outlay would add to the produce, when the actual outlay is $x$ units of labour and capital, is $f^1(x)$ per unit. The payment of labour and capital at the rate of this marginal productivity requires $x.f^1(x)$ units of produce. The remainder $f(x)-x.f^1(x)$ is the rent-yielding capacity of the land.

A striking proposition is that expressed by Mr. Wicksteed in his discussion of the problem of distribution. We state it in a partial form as follows. Let P be the value of the product of $l$ units of land, $w$ units of labour, and $c$ units of capital, so that

$$\mathrm{P}=\varphi(l.w.c.) \quad . \quad . \quad . \quad . \quad . \quad \text{(vii)}$$

expresses the relation of the product to the factors of production. Then, for some kinds of production, the increase of land, labour, and capital in exactly the same proportion will result in an increase of product in that same proportion, or

$$m\mathrm{P}=\varphi(ml.mw.mc) \quad . \quad . \quad . \quad . \quad \text{(viii)}$$

where $m$ is a numerical multiplier. If $m$ be not far from unity, this proposition may be true for kinds of production for which it is not true for all values of $m$.

Where these conditions (vii) and (viii) hold, a well-known proposition in Differential Calculus gives the result (since $\varphi$ must be a homogeneous function of $l$, $w$, $c$)

$$\mathrm{P}=l.\frac{d\varphi}{dl}+w.\frac{d\varphi}{dw}+c.\frac{d\varphi}{dc} \quad . \quad . \quad . \quad \text{(ix)}$$

or, the assignment, to each of the factors of production, of payment at the marginal rate of its contribution to the product, exhausts the total product.

Where increase of production proceeds by the increase of different factors of production in differing proportions, the above proposition does not cease to have importance. The assumption of unchanged modes of production, if made, may be held to include the association of different factors of production in uniform proportions wherever that is possible. But the advance from less to more intensive cultivation of land, under pressure of growing demand for raw products, implies the increase of other factors of production in greater degree than the land to which they are applied is increased. Thus the amounts of labour and capital, $mw$ and $mc$, are associated, not with $ml$ units of land, but with $l$ units. If $m$ is greater than unity, $\varphi(l\,.\,mw\,.\,mc)$ will be less than $\varphi(ml\,.\,mw\,.\,mc)$, unless land is so plentiful in relation to the available labour and capital that additions to the latter are needed to develop the full powers of the land actually in use. Hence, in new countries, increasing returns to labour and capital applied to land are found, and, in old countries, decreasing returns.

The expression $f(x)-x\,.\,f^1(x)$, obtained above as a representation of rent, states rent as a residue. The expression $l\,.\,\frac{d\varphi}{dl}$ in equation (ix) is equated to terms representing just what the $f(x)-x\,.\,f^1(x)$ represented in the preceding. Thus an expression for rent, representing it in similar form to the remuneration of other factors in production, is secured. Now $\frac{d\varphi}{dl}$ represents the rate of decrease of product resulting from concentrating on a smaller area the productive efforts applicable to a larger area. Hence the statement, that the rent of $l$ units of land is $l\,.\,\frac{d\varphi}{dl}$, merely means that production is supposed to be so organised that the reduction of output, caused by such concentration, is just balanced by the consequent saving in cost of hire of land.

The problem of joint supply may be expressed conveniently in algebraic terms. Let $x$ be the amount of commodity A which is produced in the same process as the amount $z$ of commodity B, and let $y$ be the joint expenses of production of these amounts. The demand price for the amount $x$ of A being $y_1$, and the demand price for the amount $z$ of B being $y_2$, we have, as the condition for equilibrium,

$$y = x y_1 + z y_2 \quad \text{. . . . . . . (x)}$$

The demand equations for A and B being

$$y_1 = f_1(x),\ y_2 = f_2(z) \quad \text{. . . . . . (xi)}$$

and the supply equation of the two products being

$$y = \varphi(x, z) \quad \text{. . . . . . . . (xii)}$$

we have only four equations to determine the five quantities

$$y,\ y_1,\ y_2,\ x,\ z.$$

If

$$x = n . z \quad \text{. . . . . . . . (xiii)}$$

$n$ being constant, that is, if A and B are produced in fixed proportions, the fifth equation needed for a determinate solution is supplied.

If, however, $x$ can be varied somewhat without affecting $z$, or if some small changes of both $x$ and $z$ can be made without changing the cost of the production process, *i.e.* without changing $y$, the conditions considered on p. 66 are found. Any mode of variation other than that denoted by equation (xiii) can be reduced to the first-named. Let, then, an increase $\eta$ of $y$ correspond to a small increase $\xi$ in $x$, $z$ remaining unaltered.

Then, for equilibrium, we must have the value of A such that $\eta$ is the value of an amount $\xi$. We have, in fact, determined the marginal cost of production of A per unit in the ratio of $\eta$ to $\xi$. This supplies the fifth condition needed for the determination of the five unknown quantities of the problem, and may be written

$$y_1 = \frac{d\varphi}{dx} \quad \text{. . . . . . . (xiv)}$$

$x$ having, in this equation, the value appropriate to an equilibrium between supply and demand.

A similar mode of expression might be used for the problem of joint demand, as stated on p. 68. The nature of the conceptions involved is, however, sufficiently shown in the above, and their expression in connection with allied problems, or with the problem of joint products more numerous than two, may be left as an exercise for the student.

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